Thirty-Sixth Annual Report

OF THE

Provincial Board of Health

OF

Ontario, Canada

FOR THE YEAR

1917

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
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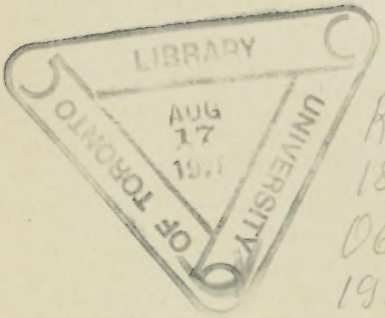

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TORONTO

To His Honour SIR JOHN STRATHEARN HENDRIE, K.C.M.G., C.R.V.O., etc., etc., etc.

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I herewith beg to present for your consideration the Thirty-sixth Annual Report of the Provincial Board of Health for the year 1917.

Respectfully submitted,

WM. DAVID MCPHERSON,

Provincial Secretary.

To the Honourable W. D. McPherson, K.C., M.P.P., Provincial Secretary of Ontario.

Sir,—I have the honour to submit for your approval the Thirty-sixth Annual Report of the Provincial Board of Health, made in conformity with and under the provisions of the Public Health Act, for the year 1917.

I have the honour to be, Sir,

Your obedient servant,

John W. S. McCullough,

Chief Officer of Health.

PROVINCIAL BOARD OF HEALTH OF ONTARIO

1917

***The Board*:**

ADAM H. WRIGHT, M.D., M.R.C.S., Eng., Chairman ..... **Toronto.**
HENRY R. CASGRAIN, M.D. ..... **Windsor.**
THOMAS E. KAISER, M.D. ..... Oshawa.
WILLIAM H. HOWEY, M.D. ..... Sudbury.
ARTHUR S. MCELROY, M.D. ..... Ottawa.
JAMES ROBERTS, M.D., M.O.H. ..... Hamilton.

Executive Officers:

JOHN W. S. MCCULLOUGH, M.D., D.P.H. (Tor.), Secretary and Chief Officer of Health.
R. W. BELL, M.D., Provincial Medical Inspector.
ALEX. R. WHITE, Sanitary Inspector, North Bay.

Laboratory Service:

JOHN A. AMYOT, M.B., C.M.G., Provincial Bacteriologist, Professor of Hygiene, University of Toronto.
H. M. LANCASTER, B.A.Sc., Provincial Chemist, Professor of Chemistry, Dental College, University of Toronto.
R. W. NAYLOR, M.B., Assistant Bacteriologist.
A. R. BONHAM, B.A.Sc., Assistant Chemist.
W. T. CONNELL, M.D., Branch Laboratory, Kingston.
H. W. HILL, M.D., D.P.H. (Tor.), Branch Laboratory, London.

Engineering Service:—

F. A. DALLYN, C.E. (Tor.), A.M. Can. Soc. C.E., Provincial Sanitary Engineer.
A. V. DELAPORTE, B.A.Sc., Chemist in Charge of Experimental Station.

Child Welfare Bureau:

Miss Mary Power, B.A.

District Officers of Health:

District.
No. 1.—Vacant by the death of MAJOR D. B. BENTLEY, M.D., Sarnia.
No. 2.—THOMAS J. MCNALLY, M.D., London.
No. 3.—DANIEL A. MCCLENAHAN, M.D., Hamilton.
No. 4.—GEORGE CLINTON, M.D., Belleville.
No. 5.—PAUL J. MOLONEY, M.D., Cornwall.
No. 6.—W. EGERTON GEORGE, M.D., North Bay.
No. 7.—ROBERT E. WODEHOUSE, M.D., Fort William.

Telephone No. Main 5800.

CONTENTS.

ANNUAL REPORT

OF THE

Provincial Board of Health for the Province of Ontario

For the Year Ending 31st December, 1917

RÉSUMÉ OF TRANSACTIONS OF THE BOARD BY THE CHIEF OFFICER OF HEALTH.

This is the 36th Annual Report of the Provincial Board of Health for the year ending on the 31st day of December, 1917.

All the members, with the exception of Lt.-Col. Casgrain, still on military duty in France, were in attendance at the meetings of the Board.

Legal Amendments and Regulations.

The only amendment to the Public Health Act passed in 1917, was Section 32a., as follows:—

> 32a.—In cities having a population of not less than 200,000 the local board may provide such dental and medical inspection of the pupils of all public schools as the regulations under the Department of Education Act may prescribe, and, in the absence of such regulations, as the local board may deem proper, and may execute, do and provide all such acts, matters and things as may be found necessary from such inspection.

No new regulations were passed during the year.

Free Distribution of Biological Products.

The policy inaugurated by the Board early in 1916 of distributing free to the public various antitoxins and sera, including diphtheria and tetanus antitoxins, triple (typhoid and paratyphoid) and small-pox vaccines, anti-meningitis serum, as well as the provision for free preventive Pasteur treatment in cases of suspected rabies has proven highly successful. The net cost was approximately $30,000. The service has been prompt and satisfactory in every part of the province, and it seems to be appreciated by both the general public and the medical practitioners of Ontario. It is probably too soon to say what effect this service will have upon the mortality of the various communicable diseases in which these remedies are used. Suffice it to say that the death-rate of diphtheria averaged 6.6 per cent. of cases for the year.

The Board desires to record its appreciation of the prompt and efficient service afforded by the Director of the Connaught Laboratories and his assistants, from which all the biological products except the triple (typhoid and paratyphoid) vaccine are procured. At all times, night or day, those in charge of the laboratories were ready and willing to dispatch supplies, and the satisfactory response to orders by telephone and telegraph from all quarters of Ontario may largely be attributed to the business-like activity of the officials of the laboratories. During the year the Board added to its supplies Pertussis Vaccine and a 1 per cent. solution of Silver Nitrate (put up in wax ampoules), both prepared in our own laboratory at No. 5 Queen's Park.

Military Supplies.

The Board has continued to supply, as usual free of cost, large quantities of triple (typhoid and paratyphoid) vaccine to the Department of Militia and Defence for the use of Canadian troops. The fact that the Canadian Army has had practically no typhoid or paratyphoid fever either here or abroad is the best evidence of successful results and the best reward the Board could claim.

The Connaught Laboratories.

The Connaught Laboratories, to which reference has already been made, and cuts of whose buildings appeared in the report of last year were formally opened in the autumn by his Excellency the Duke of Devonshire, Governor-General of Canada. On this occasion the Premier of Ontario announced that his Government, recognizing the value of these laboratories, in the protection of public health, had decided to contribute the annual income of $75,000 to the endowment. This will bring the endowment up to $100,000, thus providing a fund for valuable research work.

The Laboratories.

The Laboratories of the Board at Kingston, London, and Toronto continue to give excellent service. During the year a diagnostic service in venereal diseases was established at all three laboratories. Free outfits are supplied to physicians for the taking of specimens of blood in presumed syphilis cases, and of smears in cases of suspected gonorrhœa.

The general public health services of all our laboratories continue to be appreciated if we may judge by the constantly increasing specimens sent to them. A pamphlet, "Laboratory Service," giving full information is issued by the Board.

It is gratifying to note that the director of the Toronto Laboratory, Dr. John A. Amyot, has been for some time Chief Sanitary Advisor to the Canadian forces, and that early in the year he was honoured with the title of C.M.G.

Water Supplies and Sewerage.

Elsewhere is given in greater detail information respecting the construction of water and sewerage works during the year. Considerable important works of this character are established each year and their value in promoting the public health is undoubtedly very great.

The Experimental Plant.

Much valuable experimental work, considering our war-depleted staff, was carried out at the plant, reports of which will be found elsewhere.

The District Officers of Health.

It is with sincere regret that the Board announces the death at Granville Canadian Special Hospital, Ramsgate, Kent, England, of Major David B. Bentley, C.A.M.C., for some years District Officer of Health for No. 1 District. Major Bentley went overseas with the First Canadian Contingent in the autumn of 1914, in charge of an Ambulance Section, and suffered the severe hardships of the first two winters of the war. His health began to fail in the latter part of 1916, when he went into hospital. About the first of April, 1917, he developed pneumonia and died on the fifth. Major Bentley was an efficient medical officer and a fine soldier. The writer had known him since college days, and he ever remained of a bright, jovial and kindly disposition. His place will be hard to fill. At the latter end of 1916, Mr. George E. Young, sanitary inspector, was obliged, on account of illness, to relinquish his duties, and towards the end of the year he resigned, and Mr. Alex. R. White was appointed to fill his place.

Dr. R. E. Wodehouse has been continuously overseas since the beginning of the war. He has, after a long period of service in France, been acting as O.C. of a large convalescent home at Bearwood, Berks. His work in District No. 7 has been looked after by Dr. W. E. George, of District No. 6, while that of the late Major Bentley has been assumed by Dr. T. J. McNally. In both cases this duty is in addition to the regular duties of these officers.

The services of the various District Officers still on duty (five in all) have given a great deal of satisfaction, and the best proof of the value of the district system is the fact of its adoption in a large number of the states of the United States and of the Provinces of Canada.

Epidemiological Service.

Dr. W. C. Allison has given very valuable services in tracing the origin and causes of several outbreaks of typhoid, diphtheria, cerebro-spinal meningitis, and other affections. In this way he has proved of very great assistance to medical practitioners and the public.

Annual Conference of Health Officers.

This Conference continues to be very popular with our Medical Officers of Health. The meetings this year held in Toronto were well attended, the papers were of good quality and the discussions keen and interesting. The annual attendance remains about 300. As there are over 600 Medical Officers of Health in the Province, the attendance should be greater. It is noticeable, however, that those in attendance year after year are amongst the best and most progressive officers we have.

Child Welfare Bureau.

The Bureau has been very active during the year. Miss Power, the Director, organized a survey for the City of Hamilton, and with a corps of some twenty-five young ladies and the assistance of Nurses Knox and MacKay the history of some 23,000 births occurring in that city during the year 1915 was secured. The staff is working on the report of this survey, which we expect to have printed this year. During the year the Exhibit, comprising among other public health features, a very fair Child Welfare Section, was shown in several centres, and at the Canadian National Exhibition an extensive clinic was carried on. Our thanks in this respect are due to the Department of Health of the City of Toronto, which lent a number of its physicians, in whose hands the clinic was a decided success. Much more intensive effort is, however, necessary in order to improve Ontario's record in promoting child life. The subject is of such great importance, particularly in view of the losses sustained in war, that the protection of the health of women and children, like that of venereal diseases and tuberculosis is really a federal rather than a provincial problem, and Canada could well afford, and it would be money well-spent, to incur an annual outlay of $100,000 upon each of these public health problems. Yet the Federal Government spends little or nothing on any of them.

DEATHS IN ONTARIO FROM TUBERCULOSIS BY AGES, 1908-1918.

Year.	Total.	Ratio per 100,000	Under 5 years.					5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80 & over.	Not stated.	Total deaths from all causes.
			0-1	1	2	3	4												
	23,904		571	370	224	139	132	468	586	1,871	6,695	4,895	3,098	2,217	1,497	688	138	315	327,014
1908	2,511	112	68	46	20	13	13	43	67	216	764	479	315	217	136	70	14	30	30,947
1909	2,380	106	47	27	25	9	15	54	54	179	687	487	290	222	163	66	15	40	30,792
1910	2,291	102	38	35	19	15	6	36	55	184	652	463	293	222	160	71	18	24	31,332
1911	2,353	93	63	30	15	10	18	48	64	181	618	476	325	218	156	85	12	34	31,878
1912	2,250	87	53	30	19	9	15	46	42	154	631	500	304	200	134	64	7	42	32,150
1913	2,294	85	53	36	20	10	18	32	41	188	632	479	313	204	156	56	10	47	34,317
1914	2,340	85	54	41	20	16	11	56	58	181	688	469	307	214	116	63	12	34	32,440
1915	2,466	89	79	39	25	19	16	55	74	168	676	515	273	242	176	73	15	20	33,294
1916	2,559	92	66	43	35	19	9	53	61	224	683	536	327	238	156	68	17	24	35,580
1917	2,460	88	51	43	26	19	11	45	70	196	664	490	351	240	144	72	18	20	33,284

This Table was Compiled by the Registrar General's Department.

CASES AND DEATHS FROM COMMUNICABLE DISEASES BY MONTHS FOR THE YEAR 1917.

Months.	Smallpox.		Scarlet Fever.		Diphtheria.		Measles.		Whooping Cough.		Typhoid.		Tuberculosis.		Infantile Paralysis.		Cerebro-spinal Meningitis.	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January	9	.....	171	3	368	22	1,180	6	165	4	60	9	97	79	1	.....	12	8
February	6	.....	141	2	278	19	1,235	2	94	3	20	4	144	7	4	.....	16	12
March	13	.....	260	6	356	27	1,700	2	112	4	40	9	182	109	.....	.....	15	10
April	12	.....	197	3	223	20	842	5	76	2	36	6	165	96	1	.....	15	9
May	10	.....	200	2	198	9	663	3	88	1	184	6	151	75	1	1	5	5
June	13	.....	173	8	215	14	488	7	56	5	14	3	158	76	4	.....	12	1
July	21	.....	98	3	213	15	277	1	101	1	40	2	144	69	5	.....	1	1
August	16	.....	67	2	227	17	114	1	209	6	71	11	174	66	36	3	5	4
September	6	.....	98	1	316	15	104	.....	172	7	111	11	118	46	27	1	9	6
October	17	.....	130	2	375	20	141	1	98	6	69	5	160	68	14	4	2	.....
November	37	.....	188	.....	432	16	384	.....	142	9	37	6	101	52	7	1	14	5
December	65	.....	304	6	369	29	667	3	357	6	143	11	113	76	2	1	7	5
Totals	225	.....	2,027	38	3,590	223	7,795	31	1,670	54	825	83	1,707	819	102	11	113	66

Only about 40% of the deaths from Tuberculosis are reported weekly by the Local Boards of Health.

STATEMENT OF BIOLOGICAL PRODUCTS.

498 Municipalities. October 1st, 1916—September 30th, 1917.

	Smallpox vaccine	Diphtheria Antitoxin units	Diphtheria Antitoxin syringes	Anti-meningitis serum	Intra-spinal outfits	Tetanus Antitoxin units	Tetanus Antitoxin syringes	Pasteur Prev. Trt. Rabies	Civic Typhoid and Paratyphoid vaccine S.	Civic Typhoid and Paratyphoid vaccine D.	Military Typhoid and Paratyphoid vaccine S.	Military Typhoid and Paratyphoid vaccine D.
October	1,280	10,288,000	914	15	5	198,000	29	1	476	238	8,450	5,550
November	1,445	27,997,000	1,770	77	12	195,000	39	.....	658	329	13,150	11,050
December	790	20,382,000	1,227	146	1	54,000	6	3	262	129	5,950	12,350
January	1,320	19,781,000	1,410	46	10	78,000	13	10	248	124	18,115	11,905
February	1,070	8,207,000	758	77	23	43,500	17	4	328	183	13,800	12,510
March	1,605	18,403,000	958	90	15	94,500	16	2	1,228	614	23,700	13,350
April	1,710	10,981,000	567	134	14	208,500	54	5	1,838	919	8,525	5,525
May	2,205	10,092,000	555	61	23	124,500	15	9	1,163	634	8,100	7,050
June	2,665	11,164,000	787	83	17	84,000	19	5	360	450	19,400	21,150
July	1,840	12,806,000	1,027	31	20	188,000	32	1	530	595	23,460	15,575
August	4,610	6,148,000	436	39	.....	175,000	30	9	14,000	14,600	22,610	9,360
September	3,060	21,370,000	940	69	9	171,000	15	6	1,407	693	11,610	21,360
	23,600	177,619,000	11,349	868	149	1,614,500	285	55	22,498	19,508	176,870	146,735

Pertussis vaccine—138 boxes, 9 x 25cc. ; 4 x 20cc. : 9 x 12cc. ; 47 x 10cc.
Ophthalmia (Silver Nitrate)—112 boxes.

S—Single dose.
D—Double dose.

SUPPLEMENTARY STATEMENT.

October 1st, 1916—September 30th, 1917.

	Cost of Products	Revenue			
		Diphtheria syringes	Intra-spinal outfits	Tetanus antitoxin syringes	Total
October	$1,874 65	$182 80	2 25	5 80	190 85
November	4,760 05	354 00	5 40	7 80	367 20
December	3,543 15	245 40	45	1 20	247 05
January	3,528 45	282 00	4 50	2 60	289 10
February	1,589 25	151 60	10 35	3 40	165 35
March	3,174 55	191 60	6 75	3 20	201 55
April	2,117 60	113 40	6 30	10 80	130 50
May	1,959 70	111 00	10 35	3 00	124 35
June	2,133 25	157 40	7 65	3 80	168 85
July	2,317 30	205 40	9 00	6 65	221 05
August	1,426 45	87 20	.....	6 00	93 20
September	3,733 25	188 00	4 05	3 00	195 05
	$32,157 65	$2,269 80	$67 05	$57 25	$2,394 10

Gross expense	$32,157 65
Revenue	2,394 10
Net expense	$29,763 55

DISTRIBUTION OF BIOLOGICAL PRODUCTS.

October 1st, 1916—September 30th, 1917.

——	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Algoma—											
Bruce Mines	250										
Blind River	60										
Creighton Mine	50	144,000	5	5	1			8–4		6 x 10 cc. 6 x 12 "	
Espanola		65,000	8								
Foleyet										1 box	1 box
Franz	50	150,000				7,500		20–10			
Hearst		202,000	21								
Helen Mine		170,000	40								
Hornepayne	35	51,000		4		7,500		26–13		1	1
Jacksonboro'	15	150,000						48–24			
John Island		35,000						4–2			
McDonald & F		66,000									
Spragge		70,000									
St. Joseph		144,000	30								
Steelton		585,000	102								
Sault Ste. Marie	90	680,000	115	7						2	2
Thessalon	215	336,000		6				24–12			
Totals	765	2,848,000	321	22	1	15,000		130–65		4 boxes 6 x 10 cc. 6 x 12 cc.	4
Brant—											
Brantford	130	585,000				19,000		112–56	1		
Burford Tp								12–6			
Oakland		16,000									
Paris	60	96,000	22			4,500	3	25–25			
Totals	190	681,000	22			24,000	3	149–87	1		
Bruce—											
Albermarle		30,000									
Brant		80,000									
Carrick		182,000			6	6,000	4				
Chesley	15	198,000								3 boxes 2 x 10 cc.	
Elmwood						8,000	3	6–3			

Formosa		56,000									
Greenoch		20,000									
Huron	20	105,000		5		7,500					
Lucknow	5	36,000				15,000					
Port Elgin	75	42,000									
Tara		48,000	12		3	1,500	1				
Teeswater	5	37,000	19								
Tiverton		3,000	2								
Walkerton		96,000									
Totals	120	933,000	33	5	9	38,000	8	6–3		3 boxes 2 x 10 cc.	
Carleton—											
Eastview		200,000	30								
Gower N.		96,000		6							
Huntley		285,000	10	2	1						
Kars		30,000									
Manotick		45,000									
Nepean		374,000	50								
Osgoode		48,000		6							
Ottawa	305	12,654,000	576	16	14	18,000	6	56–23		12 boxes	116 boxes
Richmond		33,000						2–1			
Totals	305	13,765,000	666	30	15	18,000	6	58–24		12	116
Dufferin—											
Mono		48,000	12								
Melancthon		20,000	2								
Shelburne	20	75,000						20–10			
Totals	20	143,000	14					20–10			
Essex—											
Amherstburg	385							212–106			
Belle River	25	60,000	4								
Colchester S.	30	50,000	24								
Essex	180	526,000	94						1		
Fort City		414,000	102			9,000	6				
Gosfield S.	40	80,000									
Kingsville	30	117,000									
Leamington		78,000	42					24–12			
Malden		65,000	18								
Mersea	20	220,000						4–2			
Pelee Island	10	26,000						12–6		4	4
Rochester	300	170,000						60–30			

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*
October 1st, 1916—September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Vaccine Paratyphoid S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Essex—Continued											
Sandwich E	.....	377,000	45	.....	.....	.....	.....	.....	.....	.....	.....
" W	.....	340,000	80	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	530,000	65	7	1	4,500	.....	20–10	.....	.....	.....
Walkerville	60	1,908,000	366	.....	.....	.....	.....	.....	.....	.....	.....
Windsor	915	5,735,000	944	.....	16	22,500	15	10–5	.....	6	3
Totals	1,995	10,696,000	1,784	7	17	36,000	21	342–171	1	10	7
Elgin—											
Aylmer	.....	18,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bayham	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 box
Malahide	.....	15,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rodney	10	10,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Southwold	.....	130,000	35	.....	.....	7,500	5	.....	.....	.....	.....
Springfield	.....	180,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Thomas	55	1,935,000	.....	5	.....	7,500	.....	.....	.....	.....	.....
West Lorne	5	26,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	85	2,314,000	40	5	.....	15,000	5	.....	.....	.....	1 box
Frontenac—											
Clarendon & M	10	34,000	.....	.....	.....	.....	.....	8–4	.....	.....	.....
Kingston City	110	1,025,000	.....	17	2	18,000	.....	.....	.....	6 x 10 cc. 6 x 25 cc.	.....
Oso Tp	15	84,000	.....	1	.....	.....	.....	12–6	.....	.....	.....
Portsmouth	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Storrington	10	6,000	.....	2	.....	.....	.....	6–3	.....	.....	.....
Totals	145	1,149,000	.....	20	4	18,000	.....	26–13	.....	6 x 10 cc. 6 x 25 cc.	.....
Grey—											
Bentinck	.....	42,000	18	.....	.....	.....	.....	.....	.....	.....	.....
Chatsworth	.....	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Collingwood Tp	10	16,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dundalk	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Egremont	.....	101,000	14	.....	.....	.....	.....	.....	.....	.....	.....

Euphrasia	10	42,000						24-12			
Flesherton		39,000									
Glenelg		53,000	3		2	9,000					
Hanover		8,000									
Holland		40,000	8								
Keppel	10	30,000						12-6		2 boxes	
Meaford	30	234,000									
Normanby		170,000	30								
Owen Sound		281,000	125					56-28			1 box
Sullivan	5	6,000	3								
Sydenham		42,000									
Totals	80	1,154,000	201		3	9,000		92-46		2	1
Halton—											
Acton	90	52,000									
Burlington		125,000	20						3		
Esquesing	10										
Georgetown		48,000									
Milton		108,000									
Oakville	10	66,000	12	5				4-2	2		1
Totals	110	399,000	32	5				4-2	5		1
Haliburton—											
Dysart & D		84,000								2	2
Glamorgan	15										
Totals	15	84,000								2	2
Haldimand—											
Canborough		62,000						20-10			
Cayuga N		21,000	6					50-25			
" S								8-5			
Canfield									2		
Dunnville		10,000				6,000		6-3			
Hagersville	80							2-1			
Rainham		25,000						11-10			
Seneca		15,000									
Totals	80	133,000	6			6,000		87-54	2		
Hastings—											
Bangor & W	25	120,000				4,500		12-6			
Belleville		264,000			4						

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*

October 1st, 1916—September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Hastings—Con.											
Carlow	25										
Deseronto	15	12,000									
Huntingdon		15,000									
Madoc	180										
Marmora		60,000	8								
Monteagle & H.	15	96,000						12–6			
Rawdon		46,000									
Roslin		100,000						10–5			
Sidney				3	2						
Stirling		78,000									
Trenton	10	125,000		6		22,500		550–275			
Tweed	10							6–3			
Totals	280	916,000	8	9	6	27,000		590–295			
Huron—											
Ashfield	25										
Belgrave											
Brussels		95,000									1
Goderich		25,000									
Grey	10	34,000									
Hay		20,000									
Kirkton										{ 3 boxes 5 x 10 cc. }	
McKillop						3,000					
Seaforth		13,000	4								
Stanley				2		4,500	3				2
Wingham		718,000				3,000					
Totals	35	905,000	4	2		10,500	3			3 boxes 5 x 10 cc.	3
Kenora—											
Kenora	125	101,000				6,000		80–40			
Keewatin				6							
Totals	125	101,000		6		6,000		80–40			

Lambton—											
Alvinston	5	39,000				3,000		12–6			
Arkona		103,000									
Bosanquet		30,000									
Brooke	25	17,000		2		6,000				1 box	
Euphemia		60,000	20								
Forest	10	162,000	66							4 boxes	
Petrolea	65	115,000	20					50–34			
Plympton	10	153,000	5								1 box
Sarnia		170,000	70					24–12			
Thedford	5	30,000								1 box	
Totals	120	879,000	781	2		9,000		86–52		6 boxes	1 box
Leeds & Grenville—											
Brockville	40	254,000	76	18		9,000		16–8			
Cardinal						9,000					1
Crosby S		30,000									
Elizabethtown		14,000	12	6		6,000					
Front of Leeds & L		9,000				4,500					
Front of Escott										2 boxes	2
Front of Yonge	25	170,000	40		10	19,500	13	16–8			
Gananoque	70	192,000	25								
Kemptville						3,000	2				
Merrickville	20										
Newboro		55,000						8–4			
Prescott										{ 2 boxes 2 x 10 cc. }	1
Totals	155	724,000	153	24	10	51,000	15	40–20		4 boxes 2 x 10 cc.	4
Kent—											
Blenheim		179,000									
Chatham	165	1,174,000	126			54,000	18	72–36			
Dresden		355,000	12					4–2			
Dover		186,000	42								
Highgate		36,000									
Orford		24,000	4			7,500					
Raleigh								6–3			
Ridgetown		75,000									
Thamesville		83,000	10			15,000	10				
Tilbury	100	258,000	54			3,000		12–6		{ 1 x 10 cc. 2 boxes }	

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*
October 1st, 1916—September 30th, 1917.

——	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A.M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Kent—Continued											
Tilbury E.	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wallaceburg	.....	351,000	.....	.....	.....	4,500	.....	.....	.....	.....	.....
Totals	345	2,721,000	248	.....	.....	84,000	28	100–47	.....	1 x 10 cc. 2 boxes	.....
Lanark—											
Almonte	40	210,000	.....	.....	.....	30,000	.....	60–60	.....	.....	.....
Dalhousie	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Drummond	25	16,000	6	.....	.....	6,000	4	12–6	.....	.....	.....
Lanark	10	84,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montague	.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pakenham	.....	18,000	4	.....	.....	.....	.....	.....	.....	.....	.....
Perth	35	82,000	.....	3	.....	13,500	.....	.....	.....	.....	.....
Pickering	.....	76,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherbrooke S.	.....	24,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smith's Falls	125	246,000	.....	6	.....	7,500	.....	2,850–1,775	.....	.....	.....
Totals	240	792,000	10	9	.....	57,000	4	2,966–1,863	.....	.....	.....
Lennox & Ad.—											
Camden E.	10	21,000	.....	.....	.....	.....	.....	8–4	.....	.....	.....
Ernestown	.....	31,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napanee	.....	95,000	20	.....	.....	.....	.....	6–6	.....	.....	.....
Sheffield	.....	30,000	.....	.....	.....	.....	.....	12–6	.....	.....	.....
Totals	10	177,000	20	.....	.....	.....	.....	26–16	.....	.....	.....
Lincoln—											
Beamsville	50	90,000	20	.....	.....	.....	.....	.....	.....	.....	.....
Clinton	.....	30,000	.....	.....	.....	.....	.....	18–9	.....	.....	.....
Gainsborough	25	185,000	1	.....	.....	.....	.....	.....	.....	.....	.....
Grimsby	.....	135,000	10	.....	1	1,500	1	.....	.....	.....	.....
Louth	.....	34,000	.....	.....	.....	.....	.....	50–25	.....	.....	.....
Niagara Tp.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 box
Niagara Tn.	60	13,000	5	.....	3	3,000	2	.....	.....	.....	.....
St. Catharines	130	1,309,000	20	10	.....	57,000	.....	221–153	1	1	.....
Totals	265	1,796,000	56	10	4	61,500	3	289–187	1	1	1

Manitoulin—											
Assiginack	.....	21,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gore Bay	.....	54,000	15	.....	.....	.....	.....	.....	.....	.....	.....
Little Current	.....	62,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	.....	137,000	15	.....	.....	.....	.....	.....	.....	.....	.....
Middlesex—											
Caradoc	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware	.....	110,000	20	.....	.....	.....	.....	.....	.....	.....	.....
Ekfrid	.....	50,000	8	.....	.....	.....	.....	.....	.....	.....	.....
Glencoe	.....	78,000	.....	.....	.....	.....	.....	12-6	.....	.....	.....
London	450	7,280,000	905	18	.....	15,000	.....	196-98	.....	{20 doses 1 box}	.....
Lucan	.....	120,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
McGillivray	.....	.....	.....	.....	.....	.....	.....	2-1	.....	.....	.....
Metcalfe	.....	.....	.....	.....	.....	.....	.....	12-6	.....	.....	.....
Mt. Brydges	160	20,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parkhill	.....	48,000	18	.....	.....	.....	.....	.....	.....	.....	.....
Strathroy	.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westminster	.....	385,000	85	.....	.....	.....	.....	.....	.....	.....	.....
Totals	655	8,127,000	1,036	18	.....	15,000	.....	222-111	.....	20 doses 1 box	.....
Muskoka—											
Bala	.....	20,000	.....	.....	.....	.....	.....	24-12	.....	.....	.....
Bracebridge	.....	58,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gravenhurst	60	200,000	.....	.....	.....	.....	.....	32-18	.....	{6 x 10cc. 6 boxes}	.....
Muskoka San	.....	26,000	.....	.....	.....	.....	.....	.....	.....	{2 x 10 cc. 2 boxes}	.....
Huntsville	.....	53,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medora & W	.....	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrison	.....	146,000	20	.....	.....	.....	.....	.....	.....	.....	.....
Muskoka	.....	48,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oakley	5	20,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Carling	.....	25,000	.....	.....	.....	3,000	.....	.....	.....	.....	.....
Totals	65	696,000	20	.....	.....	3,000	.....	56-30	.....	9 boxes 8 x 10cc.	.....
Nipissing—											
Bonfield Tp	.....	174,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cache Bay	.....	31,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Caldwell	25	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Capreol	.....	146,000	.....	.....	.....	.....	.....	.....	.....	.....	.....

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*
October 1st, 1916—September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Nipissing—Con.											
Chisholm	150	80,000		5		7,500		48–24			
North Bay		719,000	90	5		7,500					
Smooth Rock Falls		131,000						400–200			
Sturgeon Falls	25	100,000									6
Swastika		175,000									
Totals	200	1,156,000	90	10		15,000		448–224		1	7
Norfolk—											
Delhi	20	30,000									
Port Dover		35,000						12–6		20 x 25 cc.	
Port Rowan	30	408,000	60		2	27,000	18				
Simcoe	55	108,000		3				42–21	1		
Walsingham N.	5	18,000	4					42–21			
Totals	110	599,000	64	3	2	27,000	18	96–48	1	20 x 25 cc.	
Northumberland and Durham—											
Bowmanville	10	301,000		2		3,000		24–12	1	1 box	
" Hosp.		21,000									
Brighton Vg.	25							12–6		{ 2 boxes 2 x 10 cc. }	
Cavan								50–25			
Clarke	30	55,000									
Haldimand		40,000									
Hamilton		80,000	25								
Hastings		10,000	5								
Hope		42,000									
Millbrook		65,000						12–6			
Newcastle		15,000									
Percy								6–3			
Port Hope		830,000	22	4		7,500		24–12	1	{ 3 boxes 3 x 10 cc. }	11 boxes
" " Hosp.		290,000									
Wooler								6–3			
Totals	65	1,749,000	52	6		10,500		124–67	2	5 boxes. 5 x 10 cc.	11

Oxford—												
Blenheim	15	116,000										
Ingersoll		235,000		8	1							
Nissouri E.		96,000										
Norwich N.						3,000						
" S.	10	18,000						12–6				
" Town		115,000										1 box
Otterville	25											
Oxford, N.		48,000										
" E.	20											
Thamesford								2–1				
Tillsonburg	150	100,000										
Woodstock		224,000						42–21				
Totals	220	952,000		8	1	3,000		56–28				1
Ontario—												
Beaverton								12–6				
Brock		40,000								2 x 10 cc. 2 boxes		
Cannington	10	49,000						18–9				
Oshawa	110	298,000						16–8				
Reach	5							6–3				
Uxbridge	25	112,000		5		9,000		16–8				
Whitby E.								50–25				
Totals	150	499,000		5		9,000		118–59		2 x 10 cc. 2 boxes		
Parry Sound—												
Ardbeg	10	40,000										
Burk's Falls		90,000						24–12				
Himsworth	10	126,000						6–3				
Humphrey		37,000										
Kearney	5	370,000						120–60				
McMurrich								6–3				
Machar								6–3				
Noble		21,000										
Parry Sound		207,000				15,000						
Perry		70,000	30					2–1				
Strong and J.								30–15				1 box
Totals	25	961,000	30			15,000		194–97				1 box

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*

October 1st, 1916—September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20 cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Peel—											
Bolton	.....	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brampton	.....	250,000	17	.....	.....	.....	.....	.....	.....	.....	.....
Caledon E.	15	.....	.....	.....	.....	.....	.....	12–6	.....	.....	.....
Cooksville	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Palgrave	.....	19,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Credit	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Streetsville	.....	32,000	.....	.....	.....	.....	.....	.....	.....	7 boxes	.....
Totals	25	401,000	17	.....	.....	.....	.....	12–6	2	7	.....
Perth—											
Blanchard	.....	24,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dublin	.....	.....	.....	.....	.....	.....	.....	17–10	.....	.....	.....
Elma	15	75,000	.....	.....	.....	.....	.....	8–4	.....	.....	.....
Fullarton	5	7,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hibbert	.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Listowel	20	31,000	.....	.....	.....	.....	.....	16–8	.....	1 box	1 box
Logan	10	92,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milverton	.....	.....	.....	4	.....	.....	.....	24–12	.....	.....	.....
Mitchell	5	180,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Mary's	.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stratford	85	246,000	.....	.....	.....	1,500	.....	18–9	.....	.....	.....
Totals	140	727,000	.....	4	.....	1,500	.....	83–43	.....	1 box	1 box
Peterboro—											
Belmont	.....	14,000	8	.....	.....	.....	.....	.....	.....	.....	.....
Ennismore	.....	80,000	10	.....	3	.....	.....	.....	.....	.....	.....
Havelock	10	44,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norwood	.....	95,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Otonabee	.....	20,000	2	.....	.....	15,000	10	.....	.....	.....	.....
Peterboro	105	.....	.....	12	.....	.....	.....	120–60	2	.....	.....
Totals	115	253,000	20	12	3	15,000	10	120–60	2	.....	.....

Prescott & Russell											
Alfred	.....	96,000	36	.....	.....	.....	.....	.....	.....	.....	.....
Caledonia	.....	80,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge	45	216,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Casselman	.....	48,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clarence	.....	1,066,000	.....	.....	.....	.....	.....	12-6	.....	.....	.....
Cumberland	.....	120,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkesbury E.	10	120,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
" W.	220	175,000	25	5	.....	7,500	.....	.....	.....	.....	.....
" Town	1,515	160,000	.....	.....	.....	.....	.....	.....	.....	.....	1
L'Orignal	.....	216,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navan	.....	33,000	10	.....	.....	.....	.....	.....	.....	.....	.....
Plantaganet N.	25	294,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
" S.	120	415,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland	.....	510,000	.....	.....	.....	60,000	.....	.....	.....	.....	.....
Russell	100	120,000	10	.....	5	7,500	5	.....	.....	.....	.....
Vankleek Hill	10	125,000	.....	2	.....	3,000	.....	.....	.....	.....	.....
Totals	2,045	3,794,000	81	7	5	78,000	5	12-6	.....	.....	1 box
Prince Edward—											
Bloomfield	.....	25,000	5	.....	.....	.....	.....	11-10	.....	.....	.....
Hillier	.....	70,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marysburgh N.	.....	6,000	.....	2	.....	4,500	.....	.....	.....	.....	.....
" S.	.....	27,000	6	.....	.....	6,000	4	4-2	.....	.....	.....
Picton	50	.....	.....	.....	.....	.....	.....	12-6	.....	.....	.....
Sophiasburg	50	18,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Totals	100	146,000	16	2	.....	10,500	4	27-18	.....	.....	.....
Rainy River—											
Chapple	.....	70,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Emo	.....	190,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Frances	350	54,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
McIrvine	.....	.....	.....	.....	.....	4,500	.....	.....	.....	2	2
Rainy River	150	186,000	.....	.....	.....	.....	.....	100-50	.....	.....	.....
Totals	500	500,000	.....	.....	.....	4,500	.....	100-50	.....	2	2
Renfrew—											
Admaston	.....	95,000	25	.....	.....	.....	.....	.....	.....	.....	.....
Bagot & B.	.....	257,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bromley	.....	128,000	5	.....	.....	.....	.....	.....	.....	.....	.....
Cobden	.....	138,000	36	.....	.....	.....	.....	6-3	.....	.....	.....
Eganville	.....	120,000	20	.....	.....	.....	.....	.....	.....	.....	.....

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*
October 1st, 1916—September 30th, 1917.

——	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Renfrew—Con.											
Horton		168,000	25								
Pembroke	15	161,000									
Radcliffe		21,000									
Raglan		96,000									
Renfrew	15	530,000	110		4						2
Sebastopol											
Sherwood		180,000									
Stafford		91,000						24–12			
Wilberforce		288,000									
Totals	30	2,273,000	221		4			30–15			2
Simcoe—											
Alliston	300										
Barrie	240	480,000				18,000		100–50		2 boxes	50 doses
Coldwater		320,000									
Collingwood	25	86,000	11	8	7			24–12		3 boxes	3 boxes
Cookstown		50,000						48–24			
Craighurst								2–1			
Creemore		26,000						12–6			
Flos	15	42,000		6		18,000		12–6			
Hillsdale	25										
Midland	65	142,000	24			7,500	1				
Orillia		804,000	180	6				150–75	1		
" Hospital		78,000								1 box	
Penetang		156,000									
Stayner	15	77,000									
Sunnidale	25					9,000					
Tay				6	1						
Victoria Harbor		144,000	30								
Waubaushene	5										
Totals	715	2,405,000	245	26	8	52,500	1	348–174	1	6 boxes	3 boxes 50 doses
S.D. & Glengarry—											
Alexandria	10	173,000						20–10			
Charlottenburg	20	40,000									

Cornwall Tp.	.....	110,000	20	.....	.....	.....	.....	.....	.....	.....	3 boxes
" Town	30	618,000	24	2	1	.....	.....	.....	.....	.....	.....
Finch Vg	.....	80,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Tp	.....	45,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kenyon	.....	30,000	15	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster	.....	104,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lochiel	.....	30,000	10	.....	.....	.....	.....	.....	.....	.....	.....
Maxville	20	105,000	30	.....	.....	.....	.....	50–25	.....	.....	.....
Morrisburg	10	35,000	10	.....	.....	.....	.....	.....	.....	1	.....
Osnabruck	.....	50,000	4	.....	.....	3,000	2	.....	.....	.....	.....
Winchester	.....	52,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	90	1,472,000	113	2	1	3,000	2	70–35	.....	1	3
Sudbury—											
Chelmsford	15	102,000	.....	.....	.....	.....	.....	24–12	.....	.....	.....
Coniston	.....	70,000	20	.....	.....	.....	.....	.....	.....	.....	.....
Copper Cliff	460	95,000	25	4	.....	.....	.....	2–1	.....	4 boxes	.....
Massey	25	60,000	20	.....	.....	.....	.....	.....	.....	.....	1 box
McKim	200	300,000	.....	5	.....	.....	.....	.....	.....	.....	.....
Sudbury	2,800	681,000	.....	14	4	.....	.....	2–1	.....	.....	.....
Warren	75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	3,575	1,308,000	65	23	4	.....	.....	28–14	.....	4	1
Temiskaming—											
Cobalt	115	312,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cochrane	50	420,000	.....	12	6	6,000	.....	666–3	.....	.....	.....
Haileybury	.....	122,000	32	.....	.....	.....	.....	6–3	.....	.....	.....
Hilliard	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iroquois Falls	.....	240,000	.....	.....	.....	.....	.....	2000–1000	.....	2	.....
James	25	48,000	2	6	1	10,500	1	.....	.....	.....	.....
Kerns	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Matheson	.....	44,000	.....	.....	.....	.....	.....	10–5	.....	.....	.....
New Liskeard	5	.....	.....	8	.....	.....	.....	8–4	.....	3 boxes 10x10cc	.....
Tisdale	50	25,000	.....	.....	1	1,500	1	100–50	.....	.....	.....
Totals	270	1,211,000	34	26	9	18,000	2	2790–1065	.....	5 boxes 10x10cc	.....
Thunder Bay—											
Fort William	305	1,554,000	234	.....	.....	36,000	.....	.....	.....	1 box	1
Nipigon	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Port Arthur	25	408,000	.....	.....	.....	.....	.....	60–30	.....	.....	.....
Schreiber	.....	140,000	.....	.....	.....	.....	.....	30–15	.....	.....	.....
Totals	330	2,102,000	234	.....	.....	36,000	.....	90–45	.....	2	2

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*

October 1st, 1916—September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
Victoria—											
Bexley		242,000	53								
Bobcaygeon	5										
Eldon		164,000	40								
Emily		132,000	24								
Kinmount								12–6			
Lindsay		40,000	15								
Mariposa		45,000						20–10			
Somerville		5,000	3							6 boxes 2 x 10cc	
Woodville		25,000	9							5 boxes 4 x 10cc	
Totals	5	653,000	144					32–16		11 boxes 6 x 10cc	
Waterloo—											
Ayr	10	60,000						24–12			
Galt	150	255,000								2 boxes 2 x 10cc	
Hespeler	25										
Kitchener	45	1,010,000	332	4	9	6,000	4				
New Hamburg		246,000						12–6			
Preston		26,000									
Waterloo		216,000									
Wellesley		110,000									
Wilmot		56,000									
Totals	230	1,979,000	332	4	9	6,000	4	36–18		2 boxes 2 x 10cc	
Welland—											
Bertie		48,000	12								
Bridgeburg		37,000	5							1 box	
Fort Erie		42,000	10								
Niagara Falls	50	180,000	20					9–6			
Pelham	5	29,000	13		4	4,500	3	12–6			
Port Colborne		150,000	20	6				144–72	1		

Ridgeway								4–2			
Thorold		70,000									
Wainfleet		20,000								1 box	3
Welland	80	546,000		4		19,500		663–334	1		
Willoughby		20,000						20–10			
Totals	135	11,421,000	80	10	4	24,000	3	852–430	2	2 boxes	3
Wellington—											
Clifford	20										
Drayton	60	277,000				3,000		38–20			
Elora	5	166,000	2								
Eramosa		54,000	6								
Erin and G	25	24,000				3,000	2	12–6			
Fergus	30	180,000				4,500		10–5			
Guelph	830	1,876,000				34,500				10 x 10cc 10 x 25cc	
Homewood San								6–3			
Ontario Refor'try		105,000	30			15,000					
Mount Forest	5	20,000		2		3,000					
Nichol		150,000									
Palmerston	150	157,000						10–5			
Peel								6–3			
Pilkington		134,000									
Totals	1,125	3,143,000	38	2		63,000	2	82–42		10 x 10cc 10 x 25cc	
Wentworth—											
Ancaster						7,500	5				
Barton		90,000									
Beverley		180,000	24					6–3			
Binbrook						18,000					
Dundas	10	232,000						6–3			
Flamboro W										12 boxes	
Hamilton	204	2,130,000	12	54	3	262,500	3	104–52	3	15 boxes 3 x 10cc 1 x 25cc	5
Saltfleet	20	36,000									
Totals	234	2,668,000	36	54	3	288,000	8	116–58	3	27 boxes 3 x 10cc 1 x 25cc	5
York—											
Aurora	115	94,000									
Etobicoke	60	68,000	20								

DISTRIBUTION OF BIOLOGICAL PRODUCTS.—*Continued.*

October 1st, 1916 September 30th, 1917.

—	Smallpox Vaccine	Diphtheria Antitoxin Units	Diphtheria Antitoxin Syringes	Anti-meningitis Serum at 20cc.	A. M. Outfits	Tetanus Antitoxin Units	Tetanus Antitoxin Syringes	Typhoid and Paratyphoid Vaccine S. D.	Pasteur Treatments	Pertussis Vaccine	Ophthalmia Silver Nitrate
York—Con.											
Gwillimbury, N.	.....	66,000	.....	.....	.....	.....	.....	.....	.....	6 boxes	.....
" E.	15	96,000	36	.....	6	.....	.....	.....	.....	.....	.....
Islington	.....	.....	.....	.....	.....	.....	.....	.....	1	2 boxes	.....
King	.....	24,000	.....	.....	.....	.....	.....	20–10	.....	.....	.....
Mimico	435	449,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hosp. for Insane	.....	.....	.....	.....	.....	6,000	.....	.....	.....	.....	.....
Newmarket	10	96,000	.....	.....	4	.....	.....	486–243	.....	.....	.....
New Toronto	.....	39,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond Hill	.....	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scarboro	15	54,000	.....	.....	.....	.....	.....	22–11	3	.....	.....
Schomberg	.....	99,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sutton	5	79,000	.....	.....	.....	.....	.....	6–3	.....	7 boxes	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 boxes 3 x 10cc 2 x 12cc	1
Weston	50	42,000	.....	.....	.....	.....	.....	.....	.....	.....	1
Whitchurch	25	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodbridge	10	44,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
York	40	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Toronto Free Hospital Consump.	.....	350,000	.....	.....	.....	.....	.....	60–30	.....	.....	.....
Hosp. for Inc'bles.	.....	.....	.....	.....	.....	.....	.....	50–50	.....	.....	.....
Western Hospital	.....	.....	.....	.....	.....	.....	.....	75	.....	.....	.....
Dept. Hygiene	.....	.....	.....	.....	.....	.....	.....	–330	.....	.....	.....
Hosp. for Sick Children	.....	.....	.....	.....	.....	.....	.....	50–25	.....	.....	.....
General Hospital	.....	.....	.....	.....	.....	.....	.....	–625	.....	.....	.....
Hartz & Co.	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ingram & Bell	75	15,000	.....	5	.....	7,500	.....	.....	.....	.....	.....
Prov. Laboratory	.....	.....	.....	6	2	.....	.....	.....	.....	.....	.....
Totals	915	1,715,000	56	11	12	13,500	.....	769–1327	6	18 boxes 3 x 10cc 2 x 12cc	2
Toronto	6,355	83,675,000	4,141	461	.....	288,000	142	1123–1353	30	19 boxes 40cc 17 x 10cc 2 x 12cc	5 boxes

REPORT OF THE BUREAU OF CHILD WELFARE

From October, 1916, to December, 1917

The Chairman and Members of the Provincial Board of Health.

Gentlemen,—I have the honour to submit herewith a report upon the work of the Bureau since its establishment in the month of October, 1916, until December 31st, 1918.

That Ontario's death rate during the past ten years among infants has been comparatively high is shown by the accompanying charts. This loss of life is a matter of national importance in view of the large number of casualties in the Canadian Expeditionary Force, and it was felt that a campaign for conservation of child life was quite opportune.

Literature.

Ignorance is conceded by all authorities to play an important part in the problem of infant mortality, and as printed instruction is an essential feature of propaganda, the Board published "The Baby," a pamphlet upon infant and child care, in March of this year. We hope to publish bulletins on subjects relative to other phases of the question in the near future in order to meet the increasing demand for instructive literature.

Surveys.

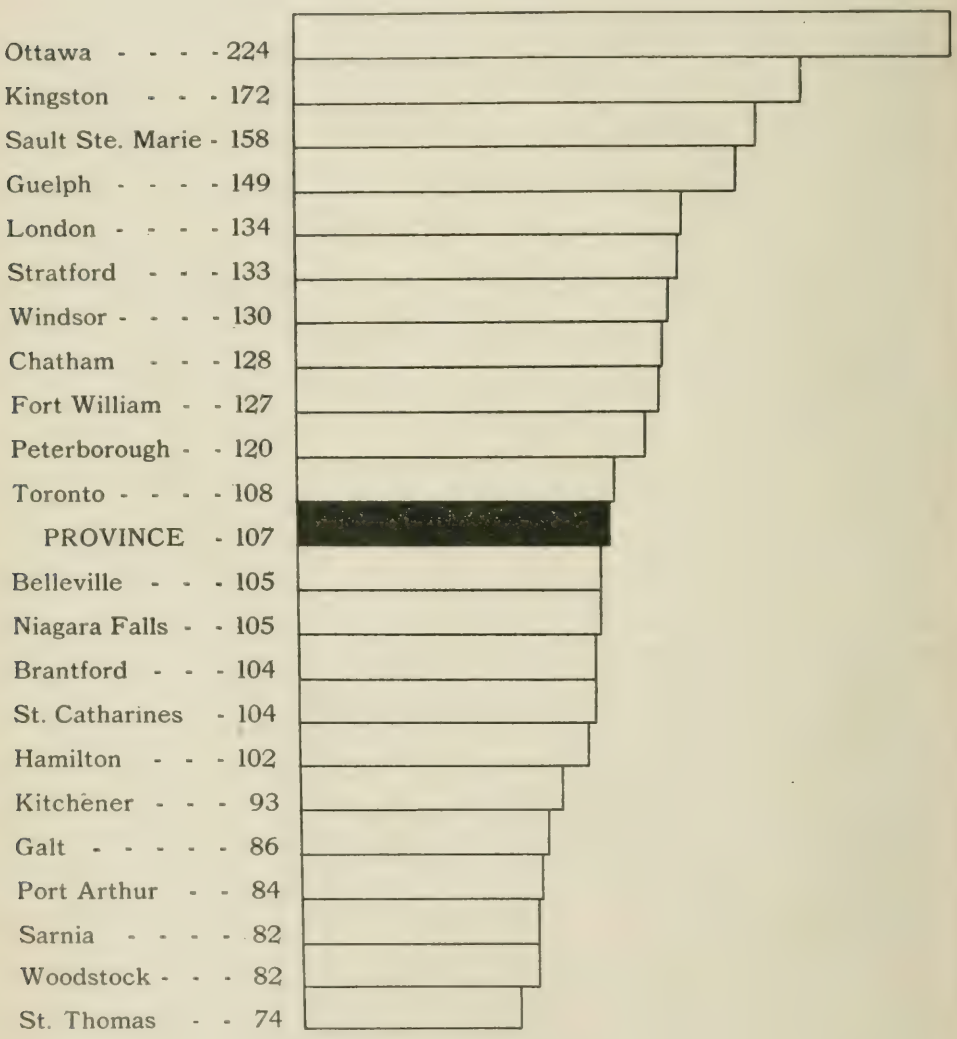
In March the Bureau was requested, by the Baby Welfare Association of Greater Hamilton, to undertake an Infant Mortality survey in that city, using the plan and methods of work of the United States Children's Bureau. In accordance with your instructions, a visit was made to Washington and every assistance possible was given by Miss Julia C. Lathrop, Chief of the Children's Bureau. We were very fortunate also in being able to accompany the agents in the city of Baltimore, where a survey was being completed. In consequence of the visit, the survey was undertaken in Hamilton, beginning June 3rd. This necessitated the special instruction of a corps of twenty-seven agents. The survey was completed on July 26th. The field work comprised the following up of 2,950 babies, and we may point with pleasure to the fact that out of this number of schedules handled, we met with but two refusals. The work of tabulation is now under way and the report will be issued in due course.

Conventions.

The Bureau sent a representative to the meeting of the Canadian Public Health Association, which was held in the city of Ottawa in the month of September, when a paper was read upon the work of the Hamilton survey. The Bureau was represented also at the annual meeting of the American Association for the Prevention of Infant Mortality, which was held in the month of October in Richmond, Va., and followed by the annual meeting of the American Public Health Association in Washington, D.C.

INFANT MORTALITY IN CITIES OF ONTARIO

(Registrar-General's Report, 1916)



Information of great value was obtained at these gatherings, and your representative derived inspiration for greater efforts in the interests of Child Welfare in Ontario, by reason of association with those engaged in the work throughout the United States and Canada.

Child Welfare Work.

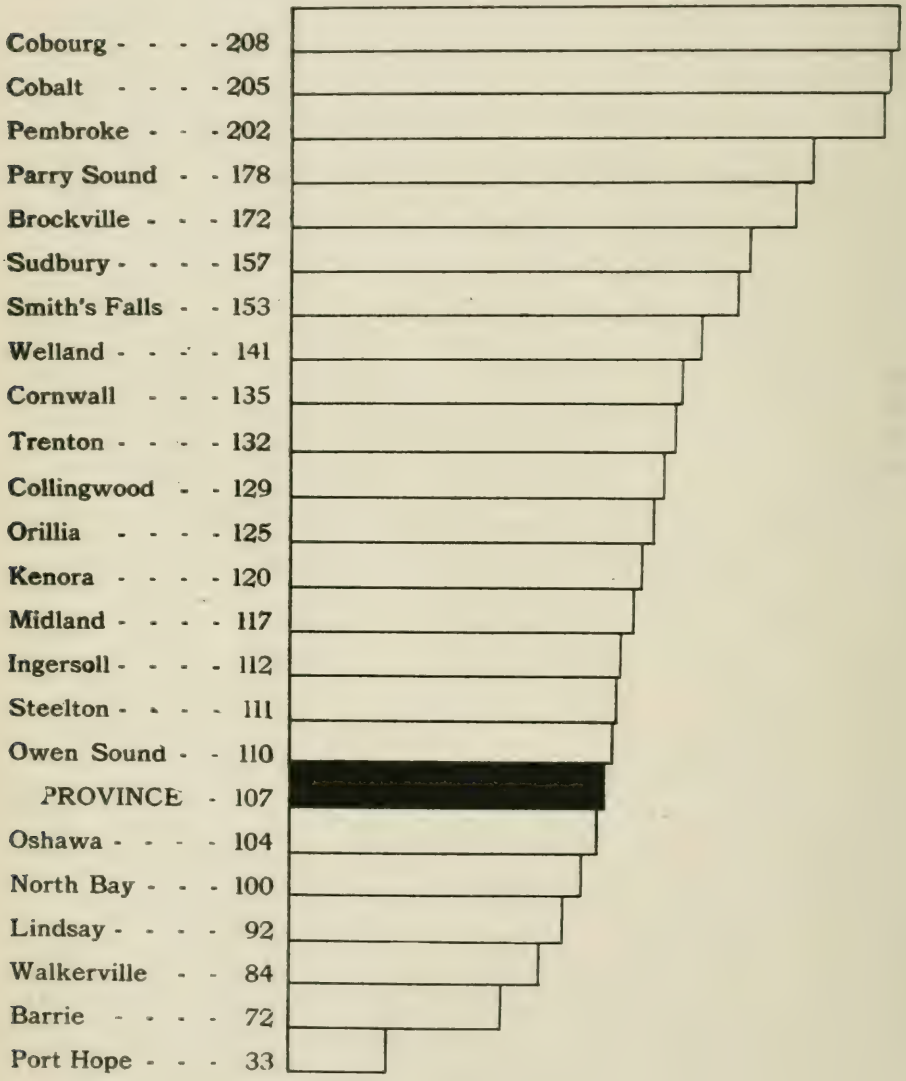
During the year, the Director has been enabled to personally see the work which is being carried on in the various cities of the Dominion, as well as some of the centres in the United States. In January, 1917, through the courtesy of the Medical Officer of Health of the city of *Toronto,* we were able to inspect the work which is being done by the Division of Child Hygiene of the Department of Public Health. In March, a visit was made to the city of *Hamilton,* where special attention was paid to the work of the Babies' Dispensary Guild. This is a private organization which has been doing excellent work for some years. When in *Baltimore,* advantage was taken of the opportunity to see the work which was being done by a local organization, "The Babies' Milk Fund." While in *Ottawa* for the meeting of the Canadian Public Health Association, a visit was made to the local Board of Health, which maintains baby clinics throughout the city. On this occasion the work of public and private agencies in the city of *Montreal* was also inspected, and a great deal of information obtained through the courtesy of the Medical Officer of Health. The work of the Diet Kitchen Association of *Washington,* D.C., was clearly outlined by the Superintendent, following the meeting in Richmond, Va., and upon the return trip, which was made by way of New York, the Division of Child Hygiene of the *New York City* Department of Health and the Baby Welfare Association made it possible for your representative to see the actual working out of the scheme for Child Welfare in that city. The assistance and information derived from these visits has been of inestimable value to the Bureau.

Exhibits.

During the year many new features have been added to the exhibit. A plaster cast of the Motherhood Group from the Victoria Memorial at Buckingham Palace, London, England, was made for the Bureau by Miss Merle Foster of the Ontario College of Art. Two mechanical models were designed in the office of the Bureau, the backgrounds of which were painted by Miss Mary Roberts, also a pupil of the Ontario College of Art. One model is illustrative of the Infant Mortality rate of the Province, while the other shows, in a graphic way, some features of the care that the baby has a right to expect. One set of posters (25) was obtained from the National Child Welfare Exhibition Company of New York City; one set (12) from the American Medical Association, and one set (10) was outlined in the office of the Bureau and painted in colors. An inexpensive layette, together with a cheap separate bed for the baby, was made for the Exhibit. A series of panels illustrative of the work that is being done in Canadian cities was begun, and we now have photographs from Toronto, Montreal, Ottawa, and Hamilton. A map of the Province was prepared showing, by means of various symbols, the centres in which the following agencies are present: Baby Welfare Work, Medical Inspection of Schools, and Public Hospitals.

INFANT MORTALITY IN TOWNS OF ONTARIO

(Registrar-General's Report, 1916)



The Child Welfare Exhibit was shown in connection with the following events:—

(*a*) The Toronto Household Exhibition, which was held in the Arena Gardens during Easter week.

(*b*) Fourth Annual Baby Week, Hamilton, in June.

(c) The Canadian National Exhibition in August, when the first Baby Clinic under the auspices of the Provincial Board of Health was held. The Medical attendants for the Clinic were very kindly supplied by the Division of Child Hygiene of the Department of Public Health of Toronto. During the twelve days of the Exhibit advice was given to several hundred mothers and 150 babies were examined in the clinic. Two nurses were appointed to supervise the work of the clinic.

(*d*) The Central Canada Exhibition at Ottawa, in September.

In November the Bureau was fortunate in securing the services of Miss B. Knox, a graduate of the Toronto General Hospital, who was associated with us in the work of the Infant Mortality Survey in Hamilton, and later acted as nurse in charge of the clinic at the Canadian National Exhibition.

In the autumn a tour of the Exhibit was arranged in which cities in the western section of the Province were visited in the order given below. Hearty co-operation was extended us by the local health authorities, children's aid societies, and other agencies interested in child welfare. We endeavoured to hold clinics in each centre where the members of the medical profession were willing to undertake the work.

City	Infant Mortality Rate, 1916	% deaths under 1 year of total deaths	Birth Rate	School Inspection by Nurse only	Victorian Order of Nurses
1. Brantford	104	19.3	26.5	Yes	Yes
2. Woodstock	82	12.8	21.6	Yes	Yes
3. Sarnia	82	15.6	23.7	Yes	No
4. Stratford	133	24.0	22.3	Yes	Yes
5. Kitchener	93	23.3	29.6	Yes	Yes
6. Galt	86	16.7	23.4	Yes	No
7. Guelph	149	22.1	22.5	Yes	No

We are of the opinion that the following points are worthy of note:—

(1) No systematic Baby Welfare work is being done in any of the centres visited.

(2) No special provision is made for hospital accommodation for sick babies and children: none of the hospitals visited include a children's ward.

(3) Of the hospitals receiving public grants none had established Out-Patient Departments.

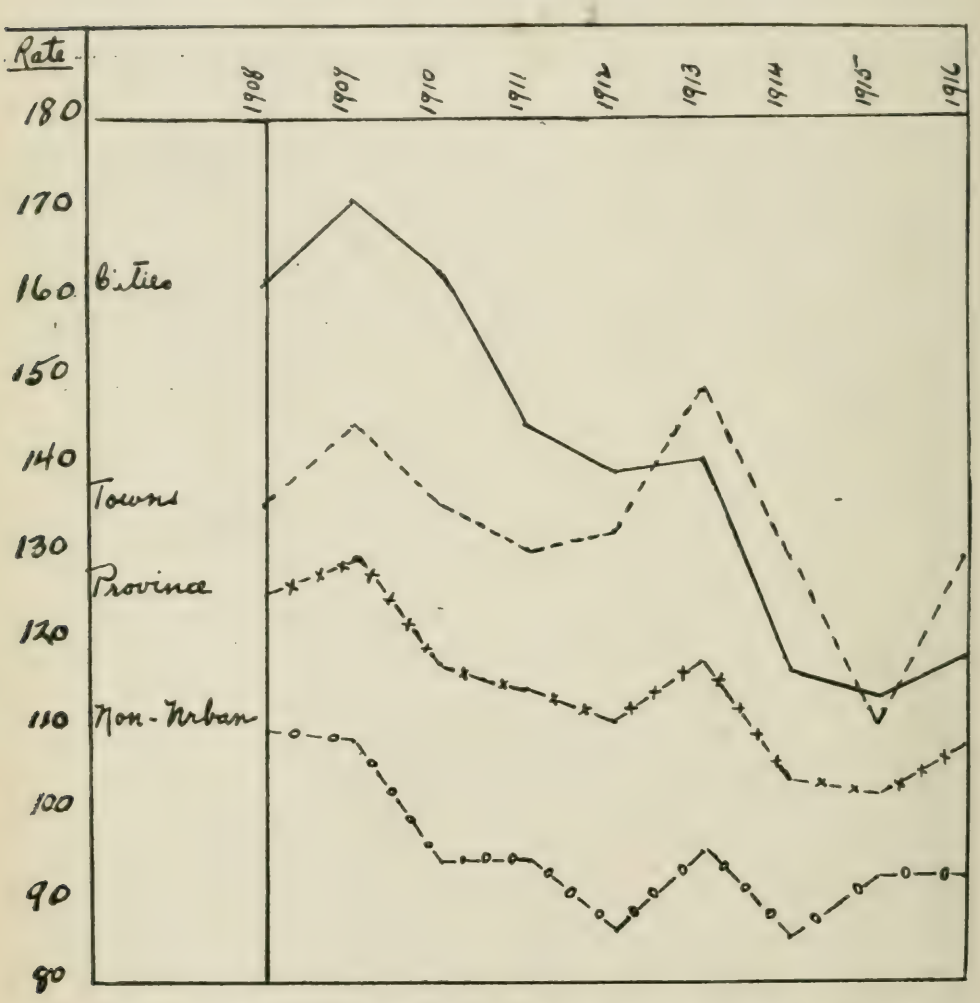
Summary.

Our endeavors this year have been directed towards stimulating local efforts, and it is our hope that the number of municipalities providing systematic care for well babies will greatly increase during 1918. Toronto, Hamilton, Ottawa, and Fort William (summer only) are the sole representatives in this field of social endeavor at the present writing.

INFANT MORTALITY RATES (1908-1916).

PROVINCE OF ONTARIO BY CLASS OF MUNICIPALITY.

(Figures supplied by Dept. of Registrar General, Ontario.)



NOTE.—Towns included are those having population of 5,000 and over. Non-Urban districts include all municipalities except cities and towns having population of 5,000 or over.

We should also be very glad to see any action tending to increase the accommodation for sick infants and children in hospitals receiving public aid.

The public health nurse has proven one of the baby's best friends, and it is our conviction that a great deal of valuable assistance can be rendered to the mothers of a municipality and a large number of babies saved yearly by the organization of public health nursing service in the cities, towns, and rural districts of the Province.

I have the honour to be,

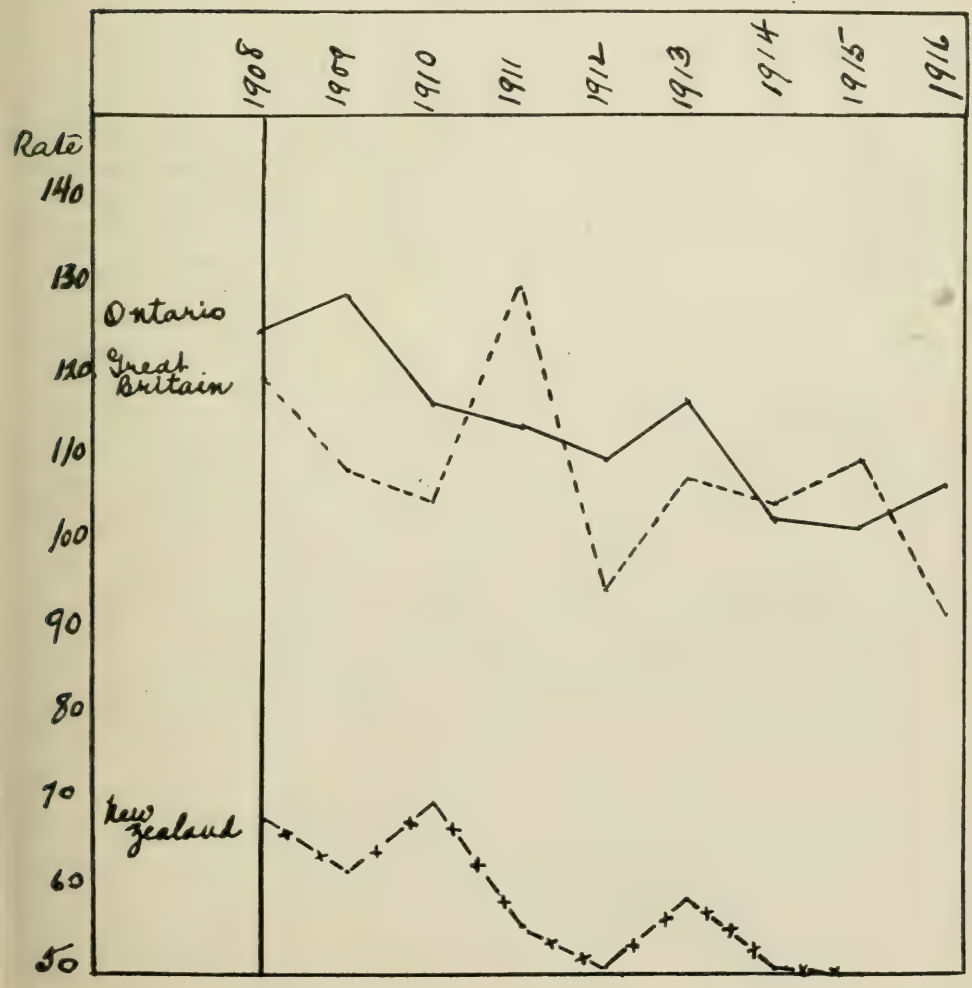
Sir

Your obedient servant,

MARY POWER,
Director Bureau of Child Welfare.

INFANT MORTALITY RATES (1908-1916).

Great Britain, New Zealand and Ontario.



EPIDEMIOLOGICAL DATA

DRS. R. W. NAYLOR and W. C. ALLISON.

PARATYPHOID FEVER EPIDEMIC IN BRANTFORD, SEPT. 16th, 1917

On September 16th, 1917, an epidemic of fourteen cases of typhoid fever was reported from Brantford.

The Cases.

On arrival I learned from Dr. Pearson, M.O.H., that in all twenty cases had been reported to him. Many others, exposed, appeared ill for a few days, but symptoms of typhoid or paratyphoid fever did not develop. All of the cases appeared within a few days of each other. Following a prompt investigation by Dr. Pearson and removal of the cause no more cases developed.

The Source.

As all cases, with the possible exception of two Russians, received their milk supply from Mr. Cusden, milk vendor of Brantford, milk was suspected of being the infective medium. Mr. Cusden received his milk from three farmers. Of these, the only place in which typhoid had occurred was in the Wright family of Cainsville. Mrs. Wright had a typhoid-like infection in August, 1917, contracted at Grimsby. No agglutination test was made then, so type of organism was not known. No other person about the place has ever had typhoid fever. Mrs. Wright is in bed at the present time and has never been well since her attack. This however is partly due to other causes.

As many of the cases are in families which receive the Wright milk exclusively, by special request, notably one family in which four cases occurred since Mrs. Wright's son at Cainsville was infected, and since no cases developed within a few days following stop of this milk supply, Mrs. Wright was undoubtedly the source.

Bacteriological Findings.

Examination of Mrs. Wright's serum gave the following results:

Typhoid B + 1:40 serum Positive—Moderate agglutination.

B Paratyphoid B + 1:40 serum, strongly Positive, complete agglutination in 60 minutes.

A Paratyphoid B + 1:40 serum—No agglutination.

The sera of two patients—one Mrs. Wright's son, the other Mr. Cusden's son—showed strong agglutinating powers with B. paratyphoid bacilli, moderate agglutinating power with typhoid bacilli, none with alpha-paratyphoid bacilli.

Fæces and urine of Mrs. Wright, the suspected carrier, were examined and pure cultures of the paratyphoid bacillus were obtained by plating. These cultures were completely agglutinated by a 1:60 dilution of the sera of two of the patients now ill.

Mode of Contamination of the Milk.

The milk cans and pails were placed in a sunbath daily on a bench outside the kitchen. This bench is twenty-five feet distant from an unprotected closet used by the family. Flies have been particularly abundant this last month, but not previous to that. This suggests a likely mode of contamination of the milk. The well, a drilled one, one hundred and eighty feet deep, appears beyond suspicion, as it is one hundred and fifty yards from the closet and well encased in concrete at the top.

W. C. Allison,
Asst. Bacteriologist.

TYPHOID FEVER IN DRAYTON, AUGUST 13th, 1917.

Having heard of a peculiar small epidemic in and about Drayton, through the local Officer of Health, Dr. Flath, I visited that place August 13th, to assist if possible in making a positive diagnosis of cause of infection, and to determine its primary source.

Cases.

I found a series of twelve to fifteen cases suffering from what was apparently a typhoid infection of only moderate virulence, as some cases were quite atypical in character, while others were fairly typical, with rose spots, splenic enlargement, abdominal tenderness, slow pulse, and temperature ranging from 99 deg. to 104 deg.

Symptoms had developed in cases dating from July 28th, to August 7th, and all cases had attended a Women's Institute meeting and supper at the home of Mr. Grose, a farmer near Drayton, on July 26th.

Drayton History.

There had been no previous outbreak of typhoid since four years ago when the river overflowed, and there had been no typhoid nor allied infection in Drayton prior to July 26th, 1917.

Grose Family and Farm.

All (5) had typhoid fever nine years ago, of fairly severe type and all recovered, Mrs. Grose being ill the longest. All have been fairly well since. Their land is almost perfectly level and they have two wells, one at the house and one at the barn, neither of which has been driven down to or through bed rock, but end in sand bottom. At the time of their illness a hopper and improvised tiling (unattached) carried away wash-water, etc., from the kitchen door past the well about 18 to 20 feet. This has since been removed. The privy which was some distance away had cement casing. There had been no hired help on the farm until last summer and this summer, with no previous history of typhoid in these people.

Picnic, July 26th.

At this meeting there were no people from other communities present and no one who had a previous history of typhoid except the Grose family. There was only one who had a previous family history of typhoid fever, one Mrs. Awde, who also developed the infection at this time.

The articles of diet served were sandwiches of salmon and lettuce, potato salad, ice cream and lemonade. All articles of food and drink were prepared by Mrs. and Miss Grose, except the ice cream which was only partly used. The remainder of the ice cream was later served in the village restaurant and caused no ill effects to people who ate it. Thus, the epidemic pointed markedly towards a carrier in the Grose family, or else to infected water, as most people partook of a great deal of lemonade, because of the extremely hot weather at that time, and for two days previous to that date. This last factor, extreme weather, could easily account for the short incubation period of the disease, i.e., due to lowered body vitality.

Diagnosis.

I obtained blood samples from some twelve cases, seven of which gave positive Widal reaction to typhoid bacilli, and five negative; all of which were negative to alpha and beta paratyphoid bacilli. The cases negative to typhoid were of the more atypical character and of shorter duration than the others.

Source?

Samples of water from the wells were obtained and both showed contamination of intestinal origin in 1 cc. quantities on two different examinations.

I obtained blood samples from the hired man and from Ethel and Harvey Grose, but could obtain none from the others, because of strenuous objection to such and to the obtaining of specimens of urine and faeces. The bloods I obtained were negative and with that the investigation had to end for want of further evidence as to the direct means of distribution of infecting organisms.

To my mind one or more of the Grose family is a carrier, but I cannot prove it for want of material evidence.

Control of Disease.

All infected cases were under control and were being looked after medically. The well water at the Grose farm was being boiled until a new well was drilled through the bed rock. All cases were doing nicely when last heard from.

Synopsis.

(1) Bacillus Typhosus proved to be the causative organism.

(2) Water in wells of Grose family showed contamination of intestinal origin in 1 cc. quantities on two examinations.

(3) Infection spread apparently from home of Mr. Grose, as all people ill had attended the Institute supper prepared by Grose family on July 26th.

(4) Organisms of moderate virulence only, as cases were not very severe in type.

(5) Investigation could not be completed because of inability to procure specimens from some of the Grose family, one or more of whom I suspect of being carriers, all having had previous history of typhoid infection.

(6) The work of Dr. Flath, the local Medical Officer of Health, during this epidemic is to be highly commended.

R. W. NAYLOR,
Bacteriologist.

Epidemic of Beta-Para-Typhoid Fever in the Townships of Essa, Innisfil, Vespra and Oro.

About October 8th or 9th, a widespread outbreak of para-typhoid fever occurred in the Townships of Essa, Innisfil, Vespra, and Oro. Within a week about sixty cases were reported. Some cases developed later and the total reached about eighty-five or ninety. They were roughly distributed as follows:

Cookstown District	18	cases
Thornton and Ivy District	35	"
Barrie and vicinity, about	15	"
Colwell and Utopia District	3	"

Cases which no doubt belonged to this epidemic were reported from Alliston, Elmgrove and other points in that vicinity. These cases occurred in people who had attended the Ivy Fair. The symptoms began at the same time and the disease ran the same general course.

Some cases were reported in which fever lasted for a few days only and were likely an abortive type of para-typhoid fever.

The Cases.

About 15 per cent. of the cases were severe. Severe and mild cases alike ran a course of about 21 days. Typical cases began with diarrhoea and nose bleed followed by fever, excruciating headache and pain in the back of the neck. Splenic enlargement, rose spots, general abdominal tenderness and coated tongue were seen in all cases. Delirium and toxaemic manifestations were rare. Complications were few. One child died of appendiceal abscess in the second week, one woman aborted, one case developed phlebitis.

The Source of Infection.

The majority of these cases were seen in young people and children who had attended the Ivy School Fair held on September 25th, that is two weeks before the outbreak. In thirty-five consecutive cases, all had been present at the fair. At this fair ice cream, only, was served to all. People brought their own lunches. Water was the only beverage used there by many people. On the supposition that either the ice cream or the water was the infective medium an inquiry was made. It was found that in thirty-five consecutive cases, thirty-four had eaten ice cream and the other case had carried an ice cream cone a quarter of a mile for a friend. On the other hand the water was used by only a few of those who became infected. The water was obtained from the Watson and the Arnold wells in Ivy. Examination of these waters showed B coli present, but typhoid or paratyphoid bacilli absent. Also, constant use of these wells has resulted in no other known cases of typhoid or paratyphoid fever. The ice cream then, seemed to be the only thing which required investigation.

The Ice Cream.

The ice cream was made in Barrie at the Olympia confectionery store. An inspection of the store and premises showed everything to be in a very sanitary condition. The three employees and the proprietor were all in apparent perfect health. None had ever had a typhoid infection. Examinations of their bloods

confirmed this, all giving negative Widals to typhoid and paratyphoid bacilli. There had been no changes in the employees for months. It was evident that the source was not here.

The Cream Supply.

The cream from which the ice cream was made was found to come from five farmers as follows:

(1) Roy Partridge, Crown Hill.
(2) A. W. Partridge, Crown Hill.
(3) Robt. Lightfoot, Little Lake.
(4) John Pratt, Penetang Road.
(5) Frank Rowe, Caldwell.

The first three places all gave negative histories for previous typhoid infection. The Lightfoot farm was, however, found to be in an extremely unsanitary condition. The J. H. Pratt family gave two histories of previous typhoid fever, both Mr. and Mrs. Pratt having had it about thirty and forty years ago respectively. Their present history was good. A stool from Mrs. Pratt showed no typhoid or paratyphoid bacilli. One place remained under suspicion.

The Frank Rowe Family.

At the onset of the epidemic Dr. Little, Medical Officer of Health of Barrie, stopped the sale of all articles of food from infected families. The sale of cream from the Rowe family was stopped on October 10th. This was due to the fact that Mrs. Frank Rowe was ill at home during the last week of August and the first two weeks of September. The attending physician, Dr. West, of Angus, diagnosed the illness (according to Mrs. Rowe) as typhoid jaundice. Her illness which occurred seven weeks after a normal delivery, began with headache, pain in joints and high fever. She became jaundiced and delirium followed. Stools were quite offensive during illness. She was in bed three weeks. Convalescence was slow. Her brother developed typhoid or paratyphoid fever after her recovery. His blood was not examined. Her brother-in-law on the next farm at Colwell Station developed paratyphoid about three weeks ago. His blood gave an agglutination with the Beta paratyphoid bacillus. Mrs. Rowe's blood was examined and gave a positive result to the Beta paratyphoid in a dilution of 1.80. It was negative to Alpha paratyphoid and typhoid. The urine and faeces of Mrs. Rowe were examined and Beta paratyphoid bacilli were isolated in pure culture from the urine. These organisms correspond in every way with cultures of Beta paratyphoid bacilli isolated from the stools of several patients now ill with Beta paratyphoid fever. They were almost completely agglutinated by a 1-80 dilution of the sera obtained from three patients in Barrie and Thornton. The same organism is found to be the cause of all cases examined with the exception of two patients now in the Barrie hospital. These patients came from distant points and did not seem to be connected with this epidemic.

Thus Mrs. Rowe is no doubt the source of the infection and is now a chronic carrier.

Cases from Eeating Ice Cream Elsewhere.

The ice cream sold at the Ivy Fair was made in part cream obtained from Frank Rowe on September 21st, and on September 23rd. This batch, one hundred and fifty gallons in all, was frozen on September 24th and distributed as follows:

Ivy Fair	15 gals.
Barrie Fair	60 "
Elmvale Fair	25 "

Remaining 50 gallons were sold over the counter.

It is not yet clear why the Ivy fair people were more badly infected than the other fair people. It is known that 86 per cent. of recently isolated typhoid bacilli die in seven days when frozen and 58 per cent. die in three days. As the Ivy Fair was held the next day and the other fairs followed a few days later, this probably would help explain the occurrence. Infection depends to a great extent on the size of the dose of organisms.

A considerable number of patients attributed their illness to ice cream eaten at the Olympia in Barrie. Their history makes this seem very probable.

Secondary Epidemic in Allandale.

An interesting feature noted in this epidemic was the occurrence of a secondary epidemic. Alod Ferris a seven year old girl living near Barrie, stayed in Barrie a few days with her uncle. While there she had ice cream occasionally at the Olympia. About two weeks later paratyphoid fever developed. Dr. Little not having been informed of this, the sale of milk was kept up. Through a dealer this milk was sold in Allandale. Several cases of paratyphoid fever developed on his milk route later. The blood of this girl gave a positive Widal with Beta-paratyphoid bacilli and pure cultures of Beta paratyphoid bacilli were isolated from her stools.

Source of Mrs. Rowe's Infection.

The source of Mrs. Rowe's infection is unknown. Her sister had typhoid fever fifteen years ago. The sister's blood gave a fairly strong agglutination to the Beta paratyphoid bacillus. The urine and stools will be examined later, if it is possible to obtain them. As she was in contact with her sister before her illness there is a probability that she is the primary source. No other cases, however, have occurred in her vicinity so far as she could tell.

W. C. Allison, M.B.
Epidemiologist.

Toronto, November 29th, 1917.

Further Statement *re* Epidemic of Beta-paratyphoid Fever in the Township of Essa, Innisfil, Vespra and Oro.

I have read Dr. Little's letter with much interest. His criticism of my Barrie epidemic report would appear justified from the Widal reports sent to him.

In his letter he says, "we had in our hospital (Royal Victoria) three cases from the vicinity of Ivy that showed a typical Widal for typhoid and not for paratyphoid."

From this I would understand that he makes the Widal report the basis of his diagnosis between typhoid and paratyphoid fever.

The question naturally arises, how much reliance can we place on a Widal reaction. We know that under ideal conditions, that is, with separate serum, accurately and sufficiently diluted, and sixteen-hour cultures of organisms of proper strain, it is a very reliable method of differentiating between typhoid and paratyphoid. The one source of error, the presence of typhoid paratyphoid group agglutinins, can be eliminated by high dilutions as shown below:

SERUM 16215—MRS. G. B., IVY.

Dilution	Typhoid	A. Paratyphoid	B. Paratyphoid
1/90	Agglut. +	Agglut. —	Agglut. + + +
1/160	Agglut., slight	Agglut. —	Agglut. + + +

This blood was obtained by venesection.

When the dried blood method is used, however, the degree of error caused by group agglutinins is a big factor, as proper dilutions are difficult to make. When one considers that in the routine examination done in the Toronto and Kingston laboratories, no special precautions have been taken heretofore to guard against this error, there is no reason why a positive typhoid report might not be sent on a case of paratyphoid fever. Tests for paratyphoid have been done in these laboratories only when asked for.

We know that typhoid paratyphoid agglutinins were present in these serums as shown below:

Serum	Dilution	Typhoid	A. Paratyphoid	B. Paratyphoid
10213	1/160	Slight agglut.	—	+ +
10214	1/160	Slight agglut.	—	+ +
10215	1/160	Slight agglut.	—	+ + +

In October and November ten specimens of blood for Widals were received by the Kingston laboratory from the Royal Victoria Hospital, Barrie. Five negative reports were sent and five positive to typhoid.

In the same period, five duplicate specimens were received by the Toronto laboratory. Five negative reports were sent back. I would account for the 100 per cent. negative reports sent from Toronto by the relatively high dilutions of sera we make here, too high for the group agglutinins to agglutinate typhoid properly. In other words, I believe the positive results seen in the Kingston laboratory were due to typhoid paratyphoid group agglutinins.

Dr. Little also says "all our cases mostly from the town (Barrie) were not paratyphoid. As I examined the sera of three Barrie cases and all definitely agglutinated the B. paratyphoid in 1/80 and 1/60 dilutions, there is no doubt but that some were paratyphoid.

SERUM OF C. Q., BARRIE.—BLOOD OBTAINED BY VENESECTION.

Dilution	Typhoid	A. Paratyphoid	B. Paratyphoid
1/160	Slight agglut.	—	+ + +

In regard to the Allandale cases, that they were paratyphoid is not proven. One feels justified in considering them paratyphoid when their milk supply was obtained from a family, who it was proven had paratyphoid fever in the house.

I would welcome any effort made to settle this matter conclusively and would therefore make the following suggestions:

1. That two specimens of blood be taken from the (*a*) three patients from Ivy, whose Widals were reported positive to typhoid. (*b*) Fernan and Ostrander of Allandale. (*c*) Three or more cases in the town of Barrie.

2. That the blood be collected in Wright capsules which will be sent to the Medical Officer of Health, Dr. Little.

3. That the duplicate specimens be examined at two laboratories, one of them to be the Toronto laboratory.

4. That each serum be tested against typhoid and Alpha and B. paratyphoid bacilli in dilutions up to 1-160.

W. C. Allison,
Epidemiologist.

September 10th, 1917.

Typhoid Epidemic at Jordan Harbour.

On Sept. 10th, three cases of typhoid fever were reported to have occurred in the Boys' Home Camp at Jordan Harbour. On Sept. 17th a fourth case was reported. All cases were clinically typical of typhoid fever and gave positive Widal reactions. One case proved fatal on the twelfth day of illness.

On Sept. 12th, Dr. McClenahan, Dr. Addy and I, visited the camp which is the summer home of the inmates of the Boys' Home, 339 George St., to determine if possible, the source of the infection. We visited also the various places where the boys worked, and obtained supplies. One place only seemed suspicious, namely, the Fester place where the boys obtained water. Miss Fester had typhoid fever three years previously. Later evidence showed that the first case occurred in Miss Kerr who had never used this water. Miss Fester also was apparently in the best of health and the closet she used drained directly over a bank and was 100 yards distant from the well. The possibility of infection from this source was remote. The water from this well showed the presence of colon bacilli as did all the other wells in the vicinity.

The milk supply of the camp was obtained from the Culp family only. The cows were often milked by a Mr. Albright. *Mr. Albright had typhoid fever thirty years ago.* His wife died of typhoid fever ten years ago. Many of his hired men and girls became ill of typhoid after working at his place only a short time. As he lived alone, he was looked upon as a likely carrier. His blood was examined and gave a strongly positive Widal reaction. Several attempts were made to obtain specimens of his faeces but without success. Albright is no doubt a carrier and the fact that he "milks wet" would give ample opportunity to contaminate the milk.

The inmates of the Boys' Home were examined and no evidence of a possible carrier could be found.

(Sgd.) W. C. Allison,
Epidemiologist.

November 27th, 1917.

EPIDEMIC OF SCARLET FEVER IN NOBLETON, SCHOOL SECTION NO. 19.

An outbreak of an eruptive fever was reported from Nobleton S. S. No. 19. An examination of several of the cases by order of Dr. Lockhart, Medical Officer of Health, resulted in three families being quarantined for scarlet fever. Owing to the diagnosis being disputed by the attending physician of one of these families, a report on the three cases was requested.

Cases in Dispute.

The cases in dispute occurred in the Holden family of Nobleton. The oldest girl, Winnifred, aged ten, returned from school Tuesday, November 27th, with slight nausea and malaise. Wednesday, the rash appeared and spread over her whole body except on the face, head and palms. These remained free. She did not vomit and felt no sore throat. Has had a "cold in the head" and has been hoarse for the last month. The eyes and conjunctivæ remained normal. The rash began to fade in about three days. Fever was present on the second and third days of illness. Examination made December 5th, showed no rash, but scaling of legs and arms. The tongue was covered by a white fur with enlarged pale papillæ projecting through it. The tonsils were enlarged and follicular in type, the pharynx showed a catarrhal inflammation. The superficial glands of the neck were all enlarged and hard. The blood showed no leucocytosis.

The urine contained no albumen but an excess of urates. A throat swab showed streptococci and a short solid bacillus.

A second case in this house occurred in Ethel Holden, aged 6. Onset December 2nd with nausea, did not vomit. The rash appeared Monday, and was all over body except on the face when first seen. Cheeks flushed and some fever was present. No pain on swallowing.

Examination showed a fading rash made up of minute points over body and limbs—face flushed, tongue had typical strawberry appearance. Minute red points were present on the hard palate. The tonsils were enlarged and congested and the pharynx showed a catarrhal inflammation. The lymph glands of the neck were all enlarged and hard. No desquamation to be seen. The urine contained an excess of urates, but no albumen.

The third patient was Alfred Holden, aged 7. Was believed to be well but looked dull and appetite was not good. An examination showed a typical pin-point rash, none on the limbs or face. The lips were dry, the tongue furred and the papillæ enlarged and red—pharyngitis present. The hard palate showed many minute red points. The neck glands were much enlarged and hard. Eyes and conjunctivæ normal. Urine contained an excess of urates but no albumen. A throat swab showed streptococci present in almost pure growth. The blood showed a slight leucocytosis.

Differential Diagnosis.

The diagnosis rests between mild cases of scarlet fever and rubella. The history of invasion, the absence of rash on the face, the character of the rash, the pharyngitis and the strawberry tongue favour scarlet fever. The punctate rash on the hard palate occurs in both diseases. The short period of invasion—one day or less—and the short duration of the rash—not over three days—could be

associated with either. The mild constitutional symptoms and the swelling of the post-cervical glands favour rubella.

The evidence at this house appeared very much in favour of scarlet fever. It seemed necessary to see more cases to confirm or disprove of this. As about ten cases in all were in the vicinity, an examination of these was made. A few points which will help in the diagnosis were noted in these cases.

Additional Cases.

Westbrook boy.—Onset with nausea and vomited once. Fever and sore throat developed that day. The rash appeared the next day. Rash was typical—had a definite strawberry tongue and pharyngitis. Leucocytosis of twenty-five to thirty thousand (estimate from blood smear).

Arthur Hill.—Sore throat, strawberry tongue, enlarged glands, fever, no rash.

George Hill.—Onset with malaise Sunday—vomited twice Sunday afternoon. Rash appeared on Monday morning. Examination showed typical rash on buttocks in groins, axilla and at bend of elbow. Typical strawberry tongue, catarrhal pharyngitis and adenitis present.

Pearl White.—Onset with severe "cold in the head" Saturday. Vomited once Saturday afternoon. Rash appeared Sunday with fever, and the throat became sore Monday. Suffered from headache considerably. Examination showed a pin-point rash absent on the face—pharyngitis, adenitis, purulent rhinitis, strawberry tongue, lips dry and inflamed. Rash just beginning to fade to-day—the third day.

Donald Archibald.—Onset Wednesday with vomiting. Rash appeared on body Friday, face was flushed and fever was present. No complaint of sore throat. Rash was gone by Monday. Examination showed a catarrhal pharyngitis with enlarged glands in the neck. Tongue almost clear of fur, with papillæ enlarged but pale, desquamation in arms and legs.

Mary Hoover.—Onset last Wednesday with dizziness and weakness in the afternoon, followed by vomiting. Rash was seen on the body Thursday when she awakened and it was accompanied by fever. Fever was less on Friday and the rash began to fade. No pain on swallowing. Examination showed large flakes of scales over the body and the cheeks. Scales were seen also between the fingers. Many of these scales have perforated centres. The tongue is clear, but fissured and shows large pale prominent papillæ. The pharynx is congested and the cervical glands are much enlarged and hard. Several other cases were seen but showed only one thing of importance in differential diagnosis, namely, the onset with vomiting.

These cases show many features which have a bearing on the diagnosis:

(1) The absence of eruptions on the face in all cases.

(2) The onset with vomiting noted in about half the cases.

(3) The typical appearance of the rash in all cases.

(4) The amount of the desquamation seen in two cases, its typical appearance and its occurrence between the fingers.

Taking all points into consideration, I believe there should be no hesitation in diagnosing these cases as scarlet fever.

W. C. Allison,
Epidemiologist.

October 2nd, 1917.

Acute Anterior Poliomyelitis at Rosemount.

Two cases of suspected cerebro-spinal meningitis were reported from Rosemount October 2nd. I went there the same night and found one boy dead after an illness of five days duration, and a second seriously ill. Both cases occurred in family of James Walker.

History of First Case.

Bert Walker, aged seventeen. Illness began Friday, September 21st, with headache, pain down spine and occasional vomiting. Had sore throat and cold in head a few days before. Symptoms remained about the same with also chilly feeling and pains in ears until Tuesday, but he was able to do the chores. Tuesday, September 25th, symptoms became more severe, paralysis of right hand and forearm muscles occurred. Dr. Blair was called and found him in stupor, cyanosed, some paralysis of tongue and pharynx, no rigidity, temperature normal. Later in day patient became comatose and died that night. Case was believed to be acute anterior poliomyelitis.

History of Second Case.

Roy Walker, aged 23. Illness began October 1st with severe headache and pains down spine with occasional vomiting. Paralysis of muscles about left hip occurred at onset. A few hours later loss of power of shoulder girdle group of muscles began and gradually became more complete. Later marked rigidity of back and photophobia developed.

Examination of Patient.

With Dr. Blair, I examined the patient and found opisthotonus, paralysis of the quadratus femoris, glutei, adductor, and hamstring groups. Deep reflexes not present, general muscular weakness. Kernig's sign present, Babinski's sign negative, moderate photophobia, injected conjunctivæ, inflamed throat, nasal discharge, temperature 101.5 deg., pulse 110, respirations about 20.

Spinal Fluid.

Lumbar puncture done—30 c.c. of clear fluid under high pressure, came away. As we suspected cerebro-spinal meningitis in spite of clear fluid, we injected 20 c.c. of anti-meningococcic serum. *October 2nd.* Patient mentally duller than usual. Loss of power of affected muscles more complete. General appearance worse. Thirty c.c. spinal fluid removed—still clear. Twenty c.c. of serum injected.

Laboratory Findings.

Fluid contained a very small number of small mononuclear lymphocytes, an occasional large lymphocyte, no leucocytes, no fibrin and no meningococci.

Diagnosis.

Acute anterior poliomyelitis.

W. C. Allison,
Epidemiologist.

August 23rd, 1917.

CASE OF CEREBRO-SPINAL MENINGITIS AT SOUTH RIVER.

History of Case.

Patient was Gladys Claridge, aged eleven. Illness began Wednesday, August 22nd, with general malaise. On Thursday had a chill followed by fever and general febrile symptoms—fever continued and on Sunday severe headache and pains in back began. Muscular rigidity of back with retraction of head, photophobia and delirium followed.

Examination of Patient.

In company with Dr. Cane, the attending physician, I examined the patient. Marked opisthotonus with general muscular rigidity and weakness were present, no paralysis, no anaesthesia. Reflexes were all present but sluggish, pupils slightly unequal. Skin of lips, cheeks and extremities cyanotic. Systolic blood pressure 116 and diastolic 92. Urine normal in S.G. and amount, no albumen. Slight cough, no sputum, lungs clear. Throat appeared normal, no nasal discharge. Temperature 101-102⁵, pulse 90-110, respirations normal. The infection appeared to be of average severity.

Spinal Fluid.

Lumbar puncture done August 28th. Fifty-four c.c. of opalescent fluid under increased pressure came away. Twenty c.c. of anti-meningococcic serum given.

The spinal fluid on standing showed fibrin formation and contained polymorphonuclear leucocytes with intracellular meningococci.

Results of Treatment.

Treatment as given by Dr. Cane consisted of hypodermics of morphine ½-¾ grains daily and good nursing. Following serum intraspinal injection there was marked relief from pain in twelve hours with lessened rigidity. Patient became more sensible but had periods of mental wandering.

August 29th.

Pains in back and headache gone, patient quite bright. General condition improved, colour better, and patient able to straighten her body. A second lumbar puncture was made by Dr. Cane. About 35 c.c. of opalescent fluid under pressure came away and was replaced by 20 cc. of anti-meningococcic serum. I saw the patient twelve hours later and she appeared improved in all respects.

Reports from Dr. Cane.

August 30th.—Patient received 20 c.c. anti-meningococcic serum.

August 31st.—Dr. Cane failed to enter canal. He reports condition improved, no paralysis, temperature about 101 deg. in the evenings, blood pressure remaining normal. Epistaxis occurred several times on August 30th and 31st.

September 5th.—Given the fourth and last injection September 1st, Dr. Cane had difficulty in introducing needle and as patient objected strenuously, this

treatment was discontinued. Temperature, pulse and respiration normal, no rigidity, no paralysis. Feeling well in every way except for general weakness.

September 20th.—Patient appears well in every way except for some general weakness.

Isolation of Family.

The mother and family were placed in a tent in backyard and were given urotropin gr. XVIII daily for prophylaxis as recommended by Flexner. No other cases appeared in the family or in the town.

W. C. Allison,
Epidemiologist.

January 15th-16th, 1918.

Epidemic of Diphtheria in Walkerville.

During the year 1917 the Town of Walkerville with a population of about 3,300, had seventy-five cases of diphtheria and eight deaths. Of these, seventeen occurred from January to June, and fifty-eight from June to December.

For the latter seven months the figures per month are:

June	13	cases,	no	deaths
July	6	"	3	"
August	3	"	0	"
September	3	"	0	"
October	17	"	1	"
November	8	"	1	"
December	8	"	1	"

In January, 1918, there were nineteen cases and one death.

As many of the clinical cases of the last two months centred about the King George School, an examination of this school was thought advisable. Dr. Hoare, of Walkerville, had already started on this school previous to my arrival in Walkerville. It was found necessary to go through the whole place (314 pupils) as the cases had been scattered.

The first examination of the King George School was made on January 15th and 16th. Two days later an examination of all those found negative on first examination was made, and one week later a third examination was made. Meanwhile, all absentees from the school were examined.

Children of seventy-eight families were found to be harbouring the diphtheria bacillus. In addition to this, five families were in quarantine for clinical diphtheria, and six for carriers, making in all ninety families. Three clinical cases were found to have occurred among the girls working in the Wilt Twist Drill plant. Eighteen carriers were found on examination, two of them being Windsor girls, and one a Ford City girl. Eighty-eight girls were examined.

On January 17th, a meeting was called of the Walkerville Board of Health, the school trustees and the town councillors. The Windsor Board of Health was invited. At this meeting the situation was talked over and it was decided to

examine the King Edward School. About 500 children attend this school. Seventy-two absentees were reported. No clinical cases had occurred in this school for several weeks. The next day an examination was made of the whole school and the following week a second was made. Children of sixty-three families were found to be carriers.

In September and October many of the cases of diphtheria centred about the St. Edward (Separate) School. No recent cases had occurred. An examination was considered advisable however, and resulted in finding carriers in eight families.

One case of diphtheria occurred in the Walker's Planing Mill and three in the Dominion Stamping Company. No carriers were found on examination.

The results of these examinations were that carriers were found among 242 healthy children in one hundred and fifty-four families.

A systematic examination of all members of these families was made in order to release them as soon as possible. This resulted in finding two hundred additional carriers mainly among women and children—fifty-two of these, however, were men.

In order to clear these cases as quickly as possible, a spray of Dichloramine T was used. The throat and nose after a preliminary cleansing was sprayed three times daily. A swab was taken 16-24 hours later. If negative, a second swab was taken, and spray was discontinued. If negative, the patient was released. If swabs remained positive, the spray was continued three times daily. In this way we were able to release all wage earners on an average under ten days.

The Dichloramine T spray was used on forty-one families. On an average, we obtained a negative swab three days following the use of the spray and were able to release the patient on the fifth day. Several children and babies with enlarged cryptic tonsils were found to resist this treatment. Also persons with nasal discharges.

Antitoxin was not used in the carrier cases. In only four instances did diphtheria develop. In one case, we believe, a clinical case could be traced to a carrier from the Wilt Twist Drill.

The organism most commonly found in the carrier cases was a solid type. Five families showed definite granular organisms corresponding to Westbrook's C. & D. types. Several families showed barred types usually corresponding to D_1 type.

The short cultivation period given the organism due to the rush of work would probably account for the small percentage of granular and barred types found.

Fourteen cultures were sent to the Provincial Board of Health Laboratories for virulence tests. All but two were so badly overgrown when they reached there, that it was found impracticable to attempt to use them. Of the two used, a growth was obtained in broth after 24 hours' incubation which, on the injection of one caused a guinea pig to appear ill for a day or more. The other culture had no effect on the guinea pig. These broth cultures were grown only one day instead of the usual three or four days so the result of these tests was unsatisfactory.

Schick tests were made on 56 persons who had never had diphtheria or antitoxin. Of these 50 were negative; 3 were faintly positive; 2 were strongly positive (brothers); 1 was indefinite.

This demonstrates that 89 per cent. at least are immune to diphtheria. Ordinarily about 25 per cent. only give negative Schick tests.

It was noted that of the one hundred and fifty-four families showing carriers, twenty-six had diphtheria in the family within the past year. Sixty-four carriers were found in these twenty-six families.

It was also noted that one-half of these families lived on two streets, thirty-nine living on Lincoln Road, and thirty-eight on Monmouth Street. Also, twenty-nine families were on Windermere and eighteen on Argyle, while the balance were scattered about the rest of the town. "Next door" cases were seen in twenty-three instances.

There has apparently been an improvement in the condition of the town. Four cases only have been reported for February. Three of these occurred in a family quarantined in January for carriers. All four occurred in the first ten days of the month.

At present there are no clinical cases or carriers in Walkerville.

W. C. Allison,
Epidemiologist.

MAJOR DAVID B. BENTLEY, C.A., M.C.
Died on Service Overseas, 5th April, 1917.

THE DISTRICT OFFICERS OF HEALTH PROVINCE OF ONTARIO

DISTRICT NO. 1.

Comprising the Counties of Lambton, Middlesex, Oxford, Elgin, Kent, Essex. District taken over temporarily by Dr. McNally.

DISTRICT NO. 2.

Comprising the Counties of Grey, Bruce, Huron, Perth, Waterloo, Wellington and Dufferin.

THOMAS J. McNALLY, M.D.

District Officer of Health, London, Ont.

I have the honour to submit a condensed annual report for the year 1917 for Districts Nos. 1 and 2.

During the year the cities and larger towns of the districts have all been visited and a general examination made of the water supplies and sewage disposal plants.

These are generally satisfactory, and with certain improvements may be made ideal.

Marked improvement has been made in Stratford's sewage disposal plant, though the humus tanks have not yet been constructed.

The care of their water supply has also received considerable attention.

The sewage disposal plant of Kitchener has been added to and this has considerably relieved the nuisance complained of in Snider's Creek.

The water supply of Guelph is now protected by chlorination which I suggest should be continued until such time as the source and pipe line are properly protected from contamination.

The operation of the Guelph sewage disposal plant is far from being satisfactory and is the source of considerable complaint from its contamination of the stream into which the effluent is emptied.

The Chatham water purification system does not operate as satisfactorily as it should. As far as I can judge, the plant has been gradually overloaded with an increased pollution of the raw water. I would advise that it be carefully gone over by the Provincial Engineer to determine what is necessary to improve the operation and suggest that his recommendations be then carried out.

From my observation of public water supplies, I would respectfully advise that a weekly or at least bi-monthly examination should be required, by the Provincial Board, of water samples, to be submitted by the Medical Officer of Health to one of the Provincial Laboratories. The result should be forwarded to the District Officer of Health.

All complaints as to insanitary conditions have been promptly investigated and in practically all cases the nuisances complained of have been abated and the cause remedied.

I have to report a continued and increasing interest taken by citizens in all matters pertaining to Public Health, Sanitation and Infant Welfare.

This interest is especially evidenced by the frequent communications I receive concerning conditions which a few years ago were tolerated by the laity as necessarily incident to life in villages, towns and cities, though dangerous to health and life.

Meat and Milk Supplies.

Slaughter houses and milk supplies are now receiving the general supervision of our local health authorities and marked improvement is apparent even in the smaller urban centres.

The sanitary condition of the schools, their out-buildings and surroundings are gradually improving under the annual inspections of our Local Health Officers. In only two cases has it been necessary for me to interfere in order to have the necessary improvements carried out.

The care and removal of manure in urban municipalities is now receiving considerable attention and conditions are improving. In some instances further improvement is desirable.

Communicable Diseases.

Smallpox.—This disease has not, during the year, assumed the proportions of an epidemic, though making its appearance in several municipalities.

Scarlet Fever.—During the year this disease has appeared in several municipalities, but in only one instance did it assume the proportions of an epidemic, and fortunately it was not of serious moment.

Tuberculosis.—The reporting of this disease is far from being as well done as it should be, and, while the medical profession generally recognize its communicable nature, it is surprising how frequently routes of transmission are overlooked by the general public.

Too much emphasis cannot be placed on early recognition and the public should be impressed with the frequency of recoveries under institutional treatment in these early cases.

Diphtheria.—Free antitoxin has materially lessened not only the incidence of, but the death rate from, this disease. The City of Windsor, the Town of Walkerville and the adjoining municipalities have been our chief source of trouble and the disease still appears to be endemic there. This is due doubtless to carriers. We have made several visits and advised with the local authorities and brought about some improvement in the situation, but the condition continues far from satisfactory.

Measles.—There have been several local epidemics of this disease during the year, but its prevalence has been much less than during last year.

Typhoid Fever.—There has not been any serious outbreak of this disease, though its incidence is altogether too frequent.

Mumps and Whooping Cough.—The reporting and quarantine of these diseases is yet far from satisfactory. In view of the recognized seriousness of the latter quarantine appears advisable.

During the year considerable attention and time has been given to endeavour to improve the sanitary conditions at Port Stanley and some progress has been made. The result of these efforts, so far, has not been all that we anticipated.

A serious nuisance was complained of at the garbage dump at Sarnia. The Sanitary Inspector has materially improved conditions, but the nuisance can only be corrected by incineration, which is under consideration of, and awaiting action by the council.

All of which is respectfully submitted.

I have the honour to be, Sir,

Your obedient servant,

T. J. McNALLY,

District Officer of Health.

DISTRICT NO. 3.

Comprising Norfolk, Haldimand, Welland, Lincoln, Wentworth, Brant, Halton, Peel, York.

CAPT. D. A. McCLENAHAN, M.D.

District Officer of Health, Hamilton.

Early in 1917 my district was favoured with a visit from the moving picture exhibit of the Provincial Board of Health. I am sure I cannot speak too highly of the educational value of this exhibit. We began the tour in February, with the opening meeting in St. Catharines, Ontario. Unfortunately, the machine did not arrive in time for the St. Catharines' meeting, so it had to be called off. We could not have it the next night because every night was filled and the advertising done in other places. We had everything in readiness for the second night at the Town of Thorold. We then visited the following places in the order named: Niagara Falls, Niagara-on-the-Lake, Welland, Port Colborne, Dunnville, Simcoe, Hamilton, Dundas, Waterdown, Stoney Creek, Grimsby and Beamsville. I had intended continuing the exhibit for some time longer in other places, but was unable to get the use of the machine and operator. It is certainly a very efficient way of popularizing the Public Health work and also a very efficient way of educating the public. The meetings were, in the main, well attended, except in one or two places where inefficient advertising had been done.

Early in April I was called to Jarvis, Ontario, to investigate the sale of alleged impure meat. It was a case where a cow had been ill of what was suspected to be milk fever. The cow was killed, when it seemed she could not possibly recover, and the carcass sold to the butcher in Jarvis. He cut up the beef and sold it. In conversation with the veterinary surgeon who attended the animal, he told me that the cow did not have milk fever and that he had advised the farmer that the carcass might be sold. The retail butcher seemed to be innocent of any intent to do wrong. While I was in Jarvis I inspected the butcher shops and found them in rather a dirty condition. The proprietors were given two weeks to clean up, and on a subsequent visit, I found things very much improved. I also visited a slaughter house just outside Jarvis and found the premises in such an unsatisfactory sanitary condition that the proprietor was notified by letter to cease slaughtering until his premises complied with the regulations. So far the slaughter-

house remains closed. On my second visit to Jarvis I also went to Selkirk where a complaint had been made about a well being used as a cesspool. The owner agreed to discontinue use of the well and put in a proper septic tank. This has been done, I presume, as we have had no subsequent complaint.

I also made several visits to the Town of Burlington to look over the water situation. A report on the matter was made to the Department, in which it was recommended that the water be chlorinated, also that some cottages on the beach near the wells and pumping stations should be removed. The order for the removal of the cottages was made by the Provincial Board, but, so far as I know, the corporation has not seen fit to put it into effect.

Early in May I met the Council and Board of Health of Niagara Township, in the County of Lincoln. I found health matters in the township in very good condition. I might say that in the year 1917 the Women's Institute in the County of Lincoln have undertaken the work of medical inspection of the school children in the county. I understand that two qualified inspectors have been engaged to do the work. It is being done through the Department of Education.

The Town of Paris was also visited during the month of May. I spent considerable time there meeting the Council and Board of Health and also visiting waterworks, and making a survey of the town. The people are awake to the necessity of more stringent Public Health measures. The Medical Officer of Health is capable and energetic and I look for improvement in conditions in Paris.

I also, during the month, visited Mount Hamilton and conferred with the Council and Board of Health on matters relating to Public Health. On May 23rd I visited Caledonia to investigate some alleged cases of diphtheria. I found some ground for complaint and recommended closer quarantine of two families. While in Caledonia I also visited the Caledonia creamery and found the same very clean and sanitary. I also visited the cattle yards at G. T. R. and the bakeries, butcher shops, etc., in Caledonia.

While the Baby Welfare exhibit was on in Hamilton, I visited the meeting and gave an address on June 25th on "How Disease is Spread."

In July I visited Port Dalhousie and had a talk with the Council and Board of Health. They are rather behind in Public Health matters. I am hopeful of improvement.

There were some cases of typhoid fever in Niagara-on-the-Lake in July and it was suggested that it might be due to milk infection. I visited all the milk dealers supplying milk to the town, but could not satisfy myself that it arose from that source.

I visited Smithville on July 9th and conferred with the Council and Board of Health of South Grimsby. The meeting was a very harmonious one and satisfactory in every way. On July 11th I made another tour of inspection in the Town of Paris.

On July 30th and 31st I visited Grimsby and the Township of Barton in connection with a septic tank at Grimsby and a large ditch at Barton. Reports were made to the Department in each case.

During the month of August I made several visits to Walker Hall near Beamsville, which was the home where the girls who assisted the farmers in picking the fruit, etc., were located. A case of typhoid had developed in one of the inmates. I recommended inoculation of all the young ladies and a large majority submitted and were so inoculated. I think it would be a good plan if the District Officers of Health were notified when such camps were to be opened.

that the boys and girls might be inoculated at once, or else have it done before they congregate together.

A number of boys from the home on George Street, Toronto, had a camp on the water front near Jordan. They come there every summer, to the number of about twenty-four, and are very useful, inasmuch as they are engaged by the farmers in the neighbourhood to assist in harvesting the fruit, etc. Two cases of typhoid fever developed among them and with the assistance of Dr. Addy, of Jordan, and Dr. Allison from the Laboratory in Toronto we were able to demonstrate that the infection, very likely, came through the milk supply. A man who occasionally helped with the milking was found, on examination of the blood, to give a positive Widal. He gave a history of having had typhoid about twenty years before. His wife had subsequently contracted typhoid and died. The cases of typhoid among the boys were milk drinkers. The presumption was that the man infected the milk while milking.

The above represent some of the activities of the District Officer of Health during 1917. A number of other complaints in different sections of the district were investigated. The work now includes quite a large correspondence with the local Medical Officers and others in the district.

D. A. McClenahan,

District Officer of Health.

DISTRICT NO. 4.

Comprising the Counties of Prince Edward, Hastings, Northumberland and Durham, Peterborough, Haliburton, Ontario, Victoria, Simcoe and Muskoka.

Geo. Clinton, M.D.

District Officer of Health, Belleville.

I have the honour herewith to submit for your consideration a summary of my work for the year 1917, District No. 4.

All the principal centres have been visited, and all public institutions inspected and reported on, in detail, to the Provincial Board.

Health Exhibits.

I started out with the Health Exhibit early in January, and visited the following places. The attendance satisfactory, showing that the public are becoming more interested in Health conditions.

Jan. 16, Bronson, N. Monaghan Tp., 3 p.m. and 8 p.m.; full houses.
" 17, Hastings, 3 p.m. and 8 p.m.; full houses.
" 18, Campbellford, 3 p.m. and 8 p.m.; full houses.
" 19, Sterling, 3 p.m. and 8 p.m.; full houses.
" 23, Marmora, too late for 3 p.m.; full house 8 p.m.
" 25, Wellington, electric light not available; hence no exhibit.
" 26, Frankford, 3 p.m. and 8 p.m.; crowded houses.
" 31, Deseronto, 3 p.m. and 8 p.m.; crowded houses.
Feb. 1, Belleville, hall not large enough for 3 p.m.; 8 p.m., about 200.
" 6, Port Perry, 3 p.m. and 8 p.m.; both meetings full house.
" 7, Beaverton, 3 p.m. and 8 p.m.; full house.
" 8, Cannington, full house at 3 p.m. At 8 p.m., small house; counter entertainments.

Some of the above places had been visited before. Had we some new films it would be more attractive.

Public Institutions.

Detailed reports have been sent for the following:—

Hospitals.—Collingwood (Marine and Isolation); Oshawa, (a large wing under construction); Barrie, no change; Belleville (separate Nurses' Home); Cobourg; Port Hope (separate Nurses' Home); Lindsay, (separate Nurses' Home); Orillia; Bowmanville; Penetanguishene; Midland; Peterborough (two General and one Isolation).

Gaols.—Picton; Belleville; Peterborough; Cobourg; Whitby; Lindsay; Barrie.

Houses of Refuge.—Picton; Belleville; Cobourg; Whitby; Lindsay; Beaton; Lakefield.

Asylums.—Cobourg; Whitby; Orillia; Penetanguishene.

Children's Aid and Orphanages.—Peterborough; Belleville; Barrie; Picton (True Blue Orphanage).

Munition Plants.—Trenton; Lindsay.

Special Visits.

January.—Oshawa: *Re* typhoid and anthrax, and tannery waste.

May.—Midland: *Re* complaint unsanitary stable. Dr. Little at Stroud *re* complaints of a tuberculosis patient exposing the public to infection. This was arranged satisfactorily.

May.—Napanee: *Re* nuisance complained of by the town. All differences between the town and company had been settled the day before my visit.

Orillia: *Re* quarantine of scarlet fever.

August.—Bowmanville: *Re* plumbing in school. A first class building, well equipped, but plumbing bad. Advised modern plumbing forthwith.

The Corby Distillery Co.: *Re* pollution of river from stables. Cattle had all been removed.

Brighton: *Re* canning factory.

September.—Oshawa: Waterworks and tannery waste. A new filtering plant under construction. The tannery has built 3 sedimentation tanks 60 by 10 ft. by 8, with 4 modern filter beds 30 ft. by 90 ft. for all fluids from sedimentation tanks. All sludge from these beds is carted away, and appear to be working well. Effluent clear.

October.—Victoria Road: By special instruction I visited this place, when I found that diphtheria had been prevalent for months. In March, 5 cases, 1 death. Again in June, 14 cases. Supposed to be caused by ice cream. Another outbreak in September, 4 cases and 1 death. I visited this place October 2nd, and at that time 3 cases were convalescing.

They have a Union School for 3 townships, and all the cases were confined within this area. I met the local Boards of Health and advised opening the school, taking swabs from each child's nose and throat, the teacher and all children old enough to play outside; to release none from quarantine until negative swabs had been procured according to the regulations. Dr. Ross took charge and no other cases have been reported.

Laxness in quarantine was evidently the cause of different outbreaks.

No cases were reported from Kirkfield. All were in Carden, Bexley and Eldon Townships.

Typhoid.

January.—Oshawa: A mild outbreak, 4 cases. Supposed to be due to infected water. Free chlorination of the water checked it. One nurse in the hospital died.

October.—Townships of Essa, Innisfil, Vespra and Oro, Simcoe County.

Beta Para-typhoid in Simcoe County.

A widespread outbreak occurred, about 75 cases. All had attended a School Fair at Ivy, and had partaken of ice cream procured from the Olympic Restaurant in Barrie. After an extended investigation made by Dr. Allison (Epidemiologist) he discovered a carrier who had been furnishing cream to the restaurant.

Also a few cases in Barrie and Allandale, due to milk.

November.—Orillia: A number of cases caused by milk from a dairy where there had been typhoid. After this milk supply was stopped, no new cases developed.

Measles.—Very prevalent, but poorly reported.

Scarlet Fever.—Only isolated cases.

Whooping Cough.—A number of cases, but not reported.

Smallpox.—Only isolated cases.

Tuberculosis.—Not reported.

Rabies.—At Bowmanville: Dogs all quarantined.

At Peterborough City: Dogs all quarantined. One child died without treatment.

Peterborough County, Smith Township: Several animals have died. The dogs have not been quarantined.

At all places visited, I notice a marked improvement in general sanitary conditions, more especially in the condition of slaughter houses. Milk by-laws have been passed in a number of places.

Water filtration plants have been installed in Orillia, Lindsay and Oshawa.

Sewage disposal plants have made very little progress. Good Sanitary Inspectors are very much needed in different places. In my district there are only three Sanitary Inspectors paid a fair salary for their whole time. They are doing good work and are giving satisfaction to the public.

Where I have been able to get regular garbage system introduced, it has given great satisfaction.

Since the beginning of the war, each year, there have been increased calls for money, Patriotic and Red Cross work. Yet I am pleased to say the general sanitary conditions are much improved. The public are beginning to realize the importance of Child Welfare, which will mean so much to this country.

Could we obtain a Health Insurance Act I believe it would be of great assistance in our work.

All of which is respectfully submitted.

GEO. CLINTON, M.D.

District Officer of Health.

DISTRICT NO. 5.

Comprising the Counties of Lennox and Addington, Frontenac, Leeds and Grenville, Dundas, Stormont and Glengarry, Prescott and Russell, Carleton, Lanark and Renfrew, and the City of Kingston.

PAUL J. MOLONEY, M.D.

District Officer of Health, Cornwall.

I have the honour to herewith submit my yearly report for the year 1917 of District No. 5. The district has a population by the last census of 326,958 people.

Outside of the urban population the residents are almost entirely engaged in farming.

In the towns and cities we have a fairly large percentage engaged in the various manufacturing concerns, principally in cotton and paper mills and in the different iron working establishments and in smaller numbers in lumber mills, furniture factories, woolen mills, etc.

While in the northern part of the district we have large settlements of Germans and Poles and in the counties near to the inter-provincial boundary, still larger communities of French-Canadians, the great majority of the population are of British and U. E. Loyalist descent.

Almost all the villages, towns and cities are situated on some large or small river, with which this part of the Province is abundantly supplied, but in the great majority of cases their municipal water supply is more or less contaminated by sewage pollution from other urban centres farther up stream. Most of the towns installed their sewage system a number of years ago and without proper disposal works being included as part of the plant. These conditions have been allowed to continue owing to the war and the difficulty of financing works of this character.

To guard the health of the inhabitants the establishment of filtration and chlorination plants for public water supplies is becoming general, Smiths Falls having installed a system during the current year.

No new municipal sewage systems have been installed in the district during the year or disposal plants in connection with those already established.

The inspection of milk, meat and other food products in the district is fairly satisfactory, but no progress during the year was noted.

A marked improvement in the character of the slaughter houses and the establishment of several new and up-to-date plants was noted, although there are still great numbers of the old fashioned kind that are a constant menace to the public health.

The District has been unusually free from outbreaks of communicable diseases of an epidemic character, an outbreak during the summer of infantile paralysis in the counties along the lower St. Lawrence and an outbreak of smallpox in Hawkesbury and vicinity, being notable exceptions.

The Public Health, besides the routine work of a District Officer, has been promoted during the year by a series of public lectures and the distribution of pamphlets and other literature dealing with health problems.

The recent amendments to the Health Act giving the Provincial Board more control over the Local Health Officers has had an excellent effect. While the great majority of Health Officers are hard working and efficient, some are very

indifferent and formerly treated the advice and direction of the District Officer with indifference and unfortunately were backed up in this attitude by their councils who often gauged the suitability of their Health Officer by the amount of expense they were put to by the Local Board.

A detailed report of the work performed in the District has been sent to the Chief Officer of Health, Dr. McCullough.

During the year a sanitary inspection was made of twelve hospitals, two asylums, seven houses of refuge, six orphanages and children's shelters and seven gaols. Faults in construction, lack of equipment and any unsanitary conditions were brought to the notice of the proper authorities and the necessary changes ordered.

A routine sanitary inspection has been made of all the principal towns and villages and also of others when special conditions called for it.

The following matters are of more marked import and call for special mention:

Westboro Drainage and Water Supply.

This District if incorporated would contain a large town population and in the summertime might attain the status of a city as far as population is concerned. It contains an unusual number of fine residences, business houses and many fine schools. It lies directly above the City of Ottawa and borders on the Ottawa River and above the Ottawa waterworks intake.

There are no municipal sewers or waterworks.

The well-to-do have wells, septic tanks and sewer beds all on their own lots which in many cases are of small area and built on in clusters.

The conditions are unprecedented in the Province and constitute a menace, not only to the residents themselves, but also to the people of the City of Ottawa.

In my opinion the only rational and eventually the inevitable procedure would be for this district to unite with the City of Ottawa. I have repeatedly interviewed the authorities of both municipalities in an endeavour to bring this about and while both seem to be agreeable to the project, the question of terms has stood in the way. In the meantime, large numbers of residences are having private plants installed at considerable expense to the individual householder. Naturally each resident going to this expense will be averse to union and by his influence render an agreement just so much more difficult. I hope for a settlement which will abate conditions next year.

Summer Resorts.

This District is particularly rich in beautiful summer resorts, the finest in the world, which are not only frequented in great numbers by Canadians but also by a continually increasing stream of summer residents from across the border. Large numbers of palatial summer homes with all modern conveniences are being built and in every case the contamination of the different waters is guarded against. The most difficulty has been found with the transient visitors and they require and receive from the local Health Officers and myself, constant supervision.

The Thousand Islands and Stanley Island and the intervening islands in the St. Lawrence have been inspected, also the mainland resorts of Hamilton Island, Hopkins Point and Stonehouse Point, the resorts on the Rideau, Charlton and Christie Lakes and those along the upper reaches of the Ottawa River.

Water Supply of Towns on the Ottawa River.

Pembroke has had no trouble with their water supply this year, the military authorities taking extra precautions to prevent contamination of the supply from the military camp at Petawawa.

On the lower Ottawa the serious conditions at Rockland, due largely to the use of the raw Ottawa River water as a household water supply, have required drastic action on the part of the Provincial Board. A purification plant will be shortly installed.

In marked contrast with the proprietors of the industrial plant at Rockland was the stand taken by the Riordon Company at Hawkesbury, where conditions are almost as serious. They were most anxious that a municipal filtration plant be installed and expressed a willingness to bear part of the expense themselves. Negotiations are now in progress for installing the plant.

In this connection I think the Assessment Act should be so amended as to bring all exempted properties under the same provision as that applied to school taxes, when the money raised is to be used for sanitary purposes, these to include water and sewerage systems.

Public Health Exhibit and Lectures.

Much interest was aroused and good results should ensue from the public lectures given at different points and those given in connection with the well-known Public Health Exhibit of the Provincial Board of Health. The moving picture exhibit in connection was well managed by Mr. Ed. Jones, of the Chief Officer's Department.

In Ottawa, where the exhibit ran for a week, and at Renfrew, where it was shown during the time the fair lasted, large crowds visited the exhibit and attended the public lectures.

Communicable Diseases.

During the year the following list of diseases was reported from this District by the secretaries of the various local Boards of Health.

Small Pox	62
Scarlet Fever	69
Diphtheria	321
Measles	340
Whooping Cough	115
Typhoid Fever	87
Infantile Paralysis	16
Cerebro-Spinal Meningitis	12

It is quite evident from the above list that in the case of certain diseases such as whooping cough and measles great neglect was shown by physicians in reporting their cases. I do not think that any procedure short of court action will suffice to correct this laxity.

Infantile Paralysis.

This disease became epidemic during the summer months. Its probable source was Ogdensburg or Massena where it had been epidemic for some time. Most of the cases were of a very mild character and were not recognized as such by the

physicians in attendance. This, no doubt, had much to do with the spread of the disease. There were probably all told about sixty cases during the present year all along the front counties.

The first cases were noted near the Village of Cardinal where one child died of a disease stated by the physicians to be "marasmus," but which I have no doubt was infantile paralysis. The next case was well marked and occurred in the adjoining house. One family of seven children were all affected in Edwardsburg Township. This case was very unusual as to the number in the family affected. Probably a dozen cases occurred in the Town of Cornwall.

In many cases the local officers had all the schools closed. On my advice the schools were re-opened, the assistance of the teachers secured to keep a tab on all the children and thereby cases were more promptly located. I find this method much more effective than the old one of closing the schools.

Strict quarantine of the patients, thorough disinfection and screening of all windows and doors, the only means at present known, was adopted in all cases to prevent the spread of the disease. We had six deaths, but the resulting paralysis in those who survived was in most cases very slight.

Smallpox.—This disease was epidemic in the Town of Hawkesbury in October, November and December of this year. The source of the infection was evidently from a locality in the Province of Quebec. A workman coming from that Province secured employment in the Riordon Paper Mills and soon after developed the disease, which later spread among his fellow workmen. I was not informed of the outbreak until October 24th, when on visiting Hawkesbury I found ten cases diagnosed. The disease, however, had secured a good foothold and before it was finally stamped out towards the end of December there were 248 cases developed, but no deaths.

Most of my time for two months was spent in connection with this outbreak.

Nearly five thousand vaccinations were made, a proclamation being issued by the Town Council making this compulsory.

Many of the cases were very mild and there was much concealment, but I gave orders and they were carried out, that all parties not reporting cases in their families be prosecuted. A fine of twenty-five dollars in every case had an excellent effect.

A charge was made for vaccination by the local physicians and to speed up the work I volunteered my services and vaccinated at the rate of three hundred a day free of charge, until the town had been pretty thoroughly protected. I received every assistance and co-operation from the local authorities possible.

Respectfully yours,

P. J. Moloney.

District Officer of Health.

DISTRICT NO. 6.

Comprising the Districts of Temiskaming, Nipissing, Parry Sound and Sudbury.

W. Egerton George, M.D.

District Officer of Health, North Bay.

Sudbury, Ratter and Dunnet and Coniston supplied the majority of the smallpox cases.

Sudbury with its important railroad connections is the centre of a large section and contains nearly all the physicians within that area. It is, therefore, hardly to be expected that communicable diseases will exist in the neighbourhood without appearing in Sudbury also. As this is precisely what takes place a financial responsibility is thrown upon the municipality to care for these. The Health Act as at present constituted does not offer the city fathers any solution. Indeed, Sudbury may become—is very likely to become—a menace at times to unaffected sections of the district.

Ratter and Dunnet is a municipality without a Health Officer. The nearest physician is at least nine miles away, and was not able to act for them. The result was that the disease had considerable start before my attention was called to the condition. After making several visits to the municipality without being able to get sufficient action out of the Council to control the outbreak; thorough vaccination of both townships was recommended and slowly carried to completion. Reasonably strenuous efforts were made to secure the services of a physician for this work, offering each his own terms, but with no success. Rev. Father Seguin then began the task and carried it to completion. I was not able to approve of this arrangement, but since no other solution presented I took no efforts to prevent it. I am satisfied that the work was thoroughly and completely done without a single seriously sore arm. All misses were re-vaccinated with fresh vaccine; and it was a very exceptional case that did not react. I feel certain that these townships will not suffer again with this disease for many years.

Coniston is a company town without municipal organization situated at the Mond Nickel Company's smelter and within the United Townships of Garson and Neelon. The epidemic here began in a very mild form and it had gained quite an impetus before it was discovered. The company physician, Dr. Cameron, who is also Medical Officer of Health for the townships, immediately instituted energetic measures and vaccinated a large section of the Township of Neelon in which Coniston is situated. Over 1,100 vaccinations were performed. The efficiency of Dr. Cameron's measures both in checking the spread and protecting against future outbreaks will have the whole-hearted support of the Department. The only regrettable feature was the fact that only one weekly return was made by the Secretary of the Local Board.

Diphtheria.—Diphtheria could hardly be said to have reached the proportions of an epidemic anywhere, but the death rate was much higher than last year. A few cases were reported again from Sprucedale where the disease has existed off and on for several years. The evidence would suggest one or more chronic carriers.

An interesting fact came out during a small outbreak at Monteith during the latter part of November. One child, a girl of seven years—in the family of Mr. S.—was in a dying condition when the physician, Dr. Armstrong, of Matheson, was called (Nov. 22nd). Another little girl of five was ill. Immuniz-

ing doses of antitoxin were administered to the balance of the family with the exception of the father—the mother and two sons. I visited the family with Dr. Armstrong on the 27th. The little girl was still ill but greatly improved, while the mother who had been immunized had sore throat and membrane. You will notice that this was five days after the antitoxin. The younger son came down two or three days later, and the elder a week later or twelve days subsequent to the antitoxin. The father who was immunized by me on the 27th, with 2,000 units developed the disease on Dec. 2nd. In the four members of the family who were immunized symptoms of diphtheria developed, but did not last longer than a day or two.

Scarlet Fever, Measles, Whooping Cough and Tuberculosis.—The very favorable returns for these diseases was no doubt largely an accident partly due to faulty returns.

Typhoid.—Sudbury, Parry Sound and Haileybury supplied the great majority of this year's typhoid. The water supplies for these towns are far from good. No municipalities within this District have much worse. Parry Sound which had such a large epidemic last year is probably the most notorious in this respect. Year after year the Grim Reaper has exacted his pound of flesh and yet they continue to offer him these yearly mortgages on the lives of their people, instead of paying with cash. During the year they have had engineers working out schemes toward a solution of their difficulties. It is to be hoped that active measures will immediately be taken to put them into force.

An outbreak in an unorganized village known as the Wye occurred in the spring. Returns are not often made from unorganized territory and the numbers here given are not included in the figures quoted above. The village was using the polluted waters of the Abitibi River which will be described later. Shallow wells were partly depended upon for a water supply, but these served principally to catch surface water from the surrounding backyards which were usually filthy and not free from human excrement. House to house visits were made by Mr. White and myself to warn the people against using the raw water. But in spite of our warnings and the emphasis of twenty prosecutions for unsanitary conditions twenty cases developed with seven deaths.

DISTRICT NO. 7.

Comprising the Districts of Kenora, Rainy River, Thunder Bay, Algoma, Manitoulin and Patricia.

Major Robert E. Wodehouse, M.D., Port Arthur (now on active service C.E.F.). District taken over temporarily by Dr. George.

I have the honour to submit for your consideration the fifth annual report for Districts Nos. 6 and 7.

It is a matter of regret that I have been unable to reduce the excessive mileage which I have to report from year to year, as it is apparent that the time thus rendered without effect is not inconsiderable. Within the year I travelled 28,220 miles, which cost the Department $978.49. Of this, 11,300 miles were within Dr. Wodehouse's territory (now on active service) while 16,920 were within District No. 6. The expenses incurred were in the proportion of $380.65 for District 7 and $597.84 for District 6.

Communities within the unorganized territory where Provincial officials alone represent the sanitary organization have revealed important responsibilities to your District Official during the past year which hitherto were much less evident. Serious conditions produced by large corporations and which could not be corrected without the expenditure of many thousands of dollars, demanded firm measures, a great deal of time and the full support of the Department. Much was attained; much still remains to be done. The mortgage thus placed upon our time will not have been in vain if the coming year gives us proportionate action on the part of these companies and communities.

Communicable Diseases.

The total number of returns for communicable diseases were as follows:

	Dist. No. 6		Dist. No. 7	
	Cases	Deaths	Cases	Deaths
Small-pox	35	0	8	0
Scarlet Fever	7	0	219	3
Diphtheria	70	11	41	3
Measles	91	2	382	0
Whooping Cough	10	0	118	1
Typhoid	32	5	22	1
Tuberculosis	6	1	16	13
Infantile Paralysis	0	0	1	0
Cerebro-Spinal Meningitis	1	1	4	4

Smallpox.—Smallpox occurred at Bruce Mines, Thessalon, Blind River and in the neighbourhood of these three places. A case or two also occurred at Fort Frances. These cases were few and widely distributed. In each place the occurrence was made justification for the vaccination of a large number, especially at the schools. At Fort Frances the Board of Health was backed up by the School Board in an order that all children must be vaccinated before returning to school. Certain anti-vaccinationists were in distress as the truant officer was threatening to prosecute for the non-attendance of the children. The frequency with which smallpox comes across the line from Minnesota at this point is ample reason for the order. It is to the credit of the Legislature that these conscientious objectors are not allowed to present a menace to others in this Province.

Scarlet Fever.—Almost all the scarlet fever cases came from Fort William, Fort Frances and Keewatin. In Fort William they had 130 cases with 2 deaths. It was noteworthy that the disease was largely limited to the coal dock area where it was most difficult to get any co-operation from the people, who are mostly foreigners. It finally became necessary to quarantine this section of the city and prevent them from coming in contact with people from the better sections. Nearly all cases were sent to the hospital where they were kept at least six weeks and in some complicated cases much longer. But in spite of the care in returning them to their homes this important fact became more and more evident, that many children produced secondary cases in their homes after returning from the hospital. I am strongly of the opinion that six weeks is insufficient for scarlet fever and that our quarantine period should be extended to a minimum of eight weeks.

The Fort Frances epidemic was very mild. There were no deaths although there were many very sick cases. Some of the physicians called it Duke's disease. The Health Officer took the stand that all such cases were scarlet fever and ordered the houses placarded for scarlet fever.

In Keewatin the epidemic was also very mild; the child that died being almost the only sick case.

Diphtheria.—The number of cases were few and the death rate small.

Measles.—Of the 382 cases in the District during the past year 324 came from Port Arthur and Fort William. The disease began apparently among the soldiers and rapidly spread throughout the City of Port Arthur. The method of controlling the disease in this city is worthy of note. Dr. Laurie, Medical Officer of Health, notified all the school teachers that hoarseness and cough was "reason to suspect" measles now that there was an epidemic on. The teachers were requested to send all showing such symptoms home and to notify him. These were quarantined on suspicion for a few days and if no rash developed they were given a certificate and returned to school. A nurse visited the schools to see that the teachers were carrying out the orders of the Health Officer. In a few cases teachers had to be severely reprimanded and even threatened with police court proceedings before complete co-operation was established. The Health Officer considered that the teacher had not done her duty if the child had been at school on the day previous to the one on which the rash appeared. Apparently there was a very rapid falling off in the number of cases when this system got into operation.

The Fort William epidemic was very probably a spreading of the disease from Port Arthur. It began toward the decline of the Port Arthur outbreak and reached its climax in April or about the first of June.

Whooping Cough.—The only outbreak of importance occurred toward the last of the year in Fort William. We have no record of any deaths having taken place from this disease in Fort William, although they had 112 cases.

Typhoid.—With only 22 cases in the District and one death typhoid control has reached a degree of perfection deserving of the highest praise. Port Arthur and Fort William particularly deserve mention in this regard as this is the first year that they have been able to report no deaths from typhoid. Port Arthur had no cases directly from the city, using city water. One or two cases were received in the hospitals from vessels in the harbour. The grand result obtained is a fitting climax to the strenuous efforts that have been put forward by the Health Officers and Boards of Health of these two cities. As the decline has been steady its disappearance has all the indications of permanency. The achievement will stand for many generations as a monument of honour to all those who have had a hand in it. Of the five cases reported from Fort William for the year all could be traced to harbour water.

Cerebro-Spinal Meningitis.—Four cases were reported from this District and one from District 6. There were five deaths. The chances of life in this disease unless taken in the first three days is probably not more than twenty per cent. Military authorities have been able to obtain comparatively good results by early lumbar puncture and the administration of Flexner's serum. Such prompt measures are not likely often to obtain in civil life.

The reporting of communicable diseases is still far from satisfactory. For example, Matheson reported only two cases of measles with one death. One cannot receive such reports without suspicion. Coniston (Garson and Neelon) reported

thirteen cases of smallpox on one card. That the returns were neither made promptly nor complete is very probable. Kenora made but two returns for the year, while I do not believe that I received one return from the City of Sault Ste. Marie.

I feel that I should not pass on without calling attention again to the handicap placed upon your District Officials due to the lack of access to birth and death returns. Infant mortality and the death rate from other preventable causes within the District should be statistical evidence familiar to every District Officer. The supplying of this information would materially increase their efficiency.

Water Supplies.

Haileybury had some trouble with corrosion of house connections and toilet flush boxes. I communicated with the Department and Mr. De Laporte came up. Some few tests made on the ground showed that the water was decidedly acid. He took other samples to Toronto in order to get further evidence as to the cause of this acidity. It was found that a large proportion of the acid was due to the alum which was not being neutralized by the lime before passing through the filters. If sufficient lime was not added to neutralize the alum it was not caught on the filters but passed through and precipitated in the mains, giving a murky water. Since the alum was of good quality a defect in the filter plant was made apparent. This defect cannot be completely eradicated at Haileybury without adding sufficient lime to neutralize the acid, and in order to do this it will be necessary to provide a mixing chamber so that the lime and alum will have about 11 minutes reaction before passing to the filters. In this way a clearer water will be produced free from corrosive action.

Smooth Rock Falls is a town without municipal organization situated at the Mattagami Pulp & Paper Company's plant on the Mattagami River three miles north of Jacksonboro which is on the Transcontinental Railway. The town obtains its water supply from the Mattagami River which is polluted by the large number of camps which are on its banks. Most of these camps are used to get out the company's pulpwood. Considerable efforts were made by Mr. White, Inspector, to your Board, and myself to get the subsidiary company which has the contract for getting out the pulpwood to realize its responsibility in this camp pollution. Early in the year promises were made that a thorough cleanup would be instituted and that efficient supervision would be maintained until spring when the dangers already established would be completely removed. The subsidiary company neglected to make good these promises with the result that the water became grossly polluted in the spring at the time of the run-off. The construction company's physician, Dr. Wright, had taken the precaution to chlorinate the water to such good effect that only a few river drivers who were drinking raw water in preference to chlorinated water, which was supplied, developed typhoid. When the construction was complete the chlorination plant went out of commission and the matter was taken up with the parent company to provide this protection. They promised to do so forthwith but after four or five months the year closed without seeing the apparatus installed. I have been assured, however, that the appliance is on order and that it will be installed before spring.

Iroquois Falls is an organized company town, of 2,500 people, owned by the Abitibi Power & Paper Co. I first visited this place on the 3rd of January after having received several complaints. The condition of affairs discovered

upon that visit was one that endangered the lives of all those who depended upon the Abitibi River as a water supply. Not the least surprising is the fact that this company, whose interests lay in the health of its employees, particularly valuable because of the isolated location of the place and the difficulty of getting people in there, should hazard the vigour of the men negligently, unadvisedly if not selfishly. Within the town 350 men were housed in camps on the banks of a ravine which discharged its drainage above the intake pipe. These camps were provided with outside closets so located that the drainage to the ravine would prevent muddy conditions about them in the spring. To make matters worse they were inadequate in size, were full to overflowing, and were so filthy that the more respectable men were satisfied to get within ten or twenty feet of the buildings. It should be noted here that the town sewers and those from the plant discharged their contents into the river, below the intake, without treatment. Since the sanitary condition of bush camps is as a rule much inferior to those located in towns the slightest reflection was enough to suggest an even more deplorable state of affairs in the camps up the river, where over 2,000 men were employed, than those we have just examined. Mr. A. R. White, your Sanitary Inspector who accompanied me on this visit, proceeded up the river immediately to ascertain the facts. His report was so much worse than I had anticipated that I decided to visit them myself. There was abundant evidence that the bowel and bladder discharges of all these men were getting into the river or would get into the river in the spring at the time of the freshet. Drastic action was necessary to protect the lives of those who depended on this for their water supply; the same, to be effective, required to be applied before the thaw. The matter was laid before the Chief Officer who sent Mr. A. V. De Laporte, one of the Departmental engineers, to report on the most advisable solution for the town. It was decided that with a thorough cleanup the up-river camps could be tolerated for the balance of the season after which they would have to be abandoned until re-located. The town camps were ordered removed immediately to a part of the townsite which could provide sewer connection having an outlet below the intake. Upon Mr. De Laporte's recommendation the company were ordered to install a satisfactory pressure filter and an automatic chlorine plant; the same to be installed and operating by the time of the freshet. The company, who now realized the seriousness of its position, carried this work through on schedule time. I am pleased to state that not one case of typhoid developed within the town limits; while in the unorganized village known as the Wye with a population of 500, twenty cases of typhoid developed with seven deaths. The company was also ordered to install a sewerage disposal plant, but although this has not yet been carried out I am informed that the spring of 1918 will see the work begun.

In Parry Sound the severe epidemic which occurred last year was sufficient to get action out of the municipal authorities which no amount of verbal warning was able to obtain. Engineers were employed to draft schemes for securing a water supply free from dangerous pollution. There is reason to hope that one will be found without undue cost.

Cobalt and North Bay sought from the Legislature rights of sanitary control over their respective water supplies. Cobalt was able to make satisfactory arrangements, but North Bay will have to exhaust other means of control before this can be granted. North Bay has not yet seen fit to carry into effect the recommendations of Mr. Dallyn, Provincial Sanitary Engineer, in regard to the changing of intake location and the installation of a chlorine plant.

At Sturgeon Falls, where the Sturgeon River is the source of water supply, many open closets are to be found along its banks within the town above the intake pipe. The Mayor informed us that these had been closed, but upon inspection they were found still in regular use.

Sewers and Privies.

Smooth Rock Falls.—Permission was obtained from the Provincial Board of Health to proceed with the construction of a sewer system. This work was rapidly carried out with the exception of the disposal plant, for which it was reasonable that further time be granted. Unfortunately, it has transpired that the company who owns the townsite has been unable to purchase certain sections of land through which their trunk sewer will have to pass to reach their disposal plant. The fact that the place is unorganized and in unorganized territory adds seriously to the difficulty of obtaining possession of the land through which their trunk sewer must pass. The perplexity is further embarrassed by a settlement for damages which is pending between the two concerns.

North Bay continued their trunk sewer some two blocks farther. This work is necessarily slow as up to the present time most of the sewer has been laid in solid rock. House connections will be provided for from 2,000 to 3,000 people when this artery is complete.

Parry Sound has now a comprehensive scheme to which all new construction will have to conform.

Fort William and Port Arthur.—Privies in the coal dock section of these cities are very poor indeed. This section is principally occupied by foreigners and has an infant mortality of over 18 per cent. in the first year of life. The Boards of Health have made repeated attempts to have by-laws passed so that a uniform basis of action would be established, but their efforts have met with very indifferent results. In Port Arthur during the past year fly-proof closets were installed in a few isolated instances at the order of the Board of Health, but the effort has not been general enough to have any appreciable effect. The Boards of Trade have been showing some interest of late and should they be sustained it will greatly strengthen the hands of the health authorities in securing concerted action. In the whole of Northern Ontario there is no locality where the solution of the unsanitary privy with its concomitant evils offers such great rewards as here.

In Kenora no attempt will be made to solve their sewer and privy difficulties until after the war. Many objectionable features require solution, but since their water supply is apparently but little endangered, the rest must wait.

At the summer resorts of Sans Souci and Copper Head in the Georgian Bay hotels were discharging their sewerage into the lake without treatment. This practice was forbidden before the 1917 season and satisfactory remedies suggested. Sub-surface disposal could be arranged, but all ground used for filters would have to be made. Outside closets were resorted to.

In South Porcupine the cesspool for the Connaught Hotel was broken and began to discharge down the ditches of the streets. It was necessary to take police court proceedings before this was corrected.

Dairies and Milk Supplies.

During the year I made a personal inspection of all dairies and dairy barns where milk is produced for Fort William, Port Arthur, Sault Ste. Marie, Kenora, Timmins and South Porcupine. In Fort William and Sault Ste. Marie I made

reports which I presented to their respective Boards of Health. In the "Soo" eight places were so inferior that I advised that they be closed. While in Fort William I advised that one be cut off. This man lost his license shortly afterward. A very interesting fact was discovered by these inspections which I think is not in accord with the common belief. It was found that the standard of cleanliness for the three cities was very much below that of the three towns; and the management of the dairy barns was distinctly superior in the towns. Bottle sterilizers and pasteurizers gave the cities some advantage, but most of the pasteurization was done to prevent the milk souring and was discontinued during the winter months. Structural conditions were on the average slightly in favor of the towns. The percentage of cream is usually higher in the towns where there is little effort made to standardize. To sum up, the quality of the milk in the three towns was better both in fat and cleanliness than was the city milk.

I regret to say that no attempt has been made by any municipality in the north country to grade the milk or to score the dairies. The National Committee on Milk Standards has given us a reasonable method of grading, while the same may be said of the method of scoring dairies as set out in the report of the Ontario Milk Commission of 1909. If those who are investing their money in equipment—possibly on the advice of the Boards of Health—are not encouraged, and if the health officials continue to act as if these requirements are unnecessary I will venture to say that not many will make the improvements. Grading and scoring will place the dairies in the order of merit and will encourage up-to-date methods. The dirty producer must be torn away from his equality association with up-to-date dairymen and exposed to the public in his true standing. The methods set forth by the official bodies mentioned above are so eminently fair that the public will sanction their use wherever and whenever instituted. I took occasion to strongly urge this matter on the Boards of Health of Sault Ste. Marie and Fort William in my reports.

The increased cost of labour and feed has caused an advance in milk prices. In spite of this, competent help has been almost impossible to get with the result that the standard of milk cleanliness has shown some evidence of dropping.

Concrete and iron construction is becoming more generally used. The advantages to be gained from the standpoint of durability and cleanliness are self-evident. Each new modern building becomes a model for others which stimulates them to improve conditions.

Conclusion.

Many trips were made to remote sections only to find that the cause of complaint had disappeared. At Whitney and St. Charles epidemics had practically died out before complaint was made. At Chelmsford a nuisance was being created by the town dump; a number of animals had to be burned before living conditions were made bearable for those living near. In Sudbury cellar dwellings were ordered closed as unfit for human habitation.

The work has become so extensive and the calls upon my time so numerous that I would respectfully urge the Department to provide me with a Sanitary Inspector, an office and a stenographer. The stenographer would save much valuable time now occupied with the ever increasing mass of correspondence which sometimes accumulates for weeks without answer. An office would also be able to handle the correspondence of Mr. White and the new appointee.

Respectfully submitted,

W. Egerton George,
District Officer of Health.

Report of Sanitary Inspector

From Alex. R. White, Provincial Sanitary Inspector, North Bay, to the Provincial Board of Health for Ontario.

North Bay, Ont., March 30th, 1918.

I have the honour to submit for your consideration my first annual report, covering the year 1917, as your Inspector in Northern Ontario.

In taking over the work of Assistant Sanitary Inspector, occasioned through the serious illness of George E. Young, who had held office under the Board for many years, and of whose death I have been advised before completing this report, it would therefore seem fitting at this time that I should make a few remarks as to the character of the work accomplished, as well as to pay tribute to the sterling qualities of this official as pioneer officer of the Board in Northern Ontario.

Re Death of George E. Young, Late Provincial Sanitary Inspector.

With the date of Mr. Young's appointment I am not conversant, but in travelling anywhere in the North country one cannot fail to be impressed with the great service he has rendered the Province, especially in the field of lumbering, he having entered upon his work among these camps, far from civilization, as it were, and raised them, when they represented practically nothing in a sanitary sense, to their present day status, this has been a man's job, the sanitary supervising of the numerous small towns which spring up like mushrooms almost over night, and the assistance which he so readily gave to struggling municipalities oftentimes in the throes of a serious epidemic of some communicable disease, such service as this has left a lasting impression throughout Northern Ontario.

Mileage Travelled with Expense to the Board.

Taking up office as I did on December 20th, 1916, right in the very midst of the lumbering season, when so much work required to be performed in connection with this industry, much valuable time was lost in familiarizing myself with the character of the work, as well as introducing myself to the various health officers and contracting physicians throughout Districts No. 6 and 7, which comprise what is known as Northern Ontario.

During the year I travelled 18,523 miles, almost entirely in Districts No. 6 and 7, at a total expense to the Department, including railroad fares, of $791.14.

As a large part of my work is in the unorganized sections of the Province, and while there are many towns and villages situated therein, yet much of my time is taken up especially during the winter months in visiting and inspecting the various lumbering and mining camps, both industries being carried on extensively in the northern and western ends of the Province.

Lumbering Statistics.

During the year I have endeavoured to compile statistics showing the number of lumber companies operating in Ontario, together with the number of camps in use, and the approximate number of men employed. The returns supplied by the

various Crown timber agents throughout the Province, together with such information as I have been able to gather in the different centres which I have visited, indicate that during the season of 1917-18 there were 173 companies operating chiefly in such districts as Port Arthur, Sudbury, Parry Sound, Webbwood, Cochrane, Porcupine, New Liskeard, North Bay, Thessalon, Arnprior, Sault Ste. Marie, Peterborough, and Kenora. This number of companies I find give us a total of 500 camps, which employ approximately 17,000 men.

Number of Camp Inspections Made.

During the year I visited and inspected 113 of these camps, 48 of which I gave one visit, 35 two visits, and 30 three visits. Camps at which I made one visit are situated at such places as Osborne, Espanola, Levack, Parry Sound, Kenny's Siding, and Sundridge.

Two visits being made to camps located near such places as Timmins, Foleyet, Jacksonboro, and Iroquois Falls.

Three visits were made to the camps of the Mattagami Pulp & Paper Co., near Smooth Rock Falls on the Mattagami River, therefore taking into consideration the number of extra visits made in connection with follow up work, this would give us a total of 235 visits.

Provisions of Camp Regulations.

The regulations of the Provincial Board provide that employers of labour in the unorganized territory (that is to say, sections of the Province without municipal organization) shall contract with a duly qualified physician for the sanitary supervision of all camps, works, or other industries, and that a copy of the agreement so entered into shall at the time of the making be transmitted to the Department, together with a sketch or plan showing the lay-out of the several buildings, with the drainage marked thereon, as well as answers to the various questions which are to be found on page 27 of these Regulations.

It is further provided that every employer of labour other than a lumber company shall enter into a contract for the medical care of their employees, and in order to so do may deduct from such employee's wages a sum not to exceed $1.00 per month, which must be paid to the physician without rebate or deduction.

Information Received.

Therefore in compliance with the above Regulation, we have secured medical agreements from 100 companies, received 135 camp sketches and general informations, and have also been provided with 117 reports from contracting physicians.

Inspection of Camps of the Abitibi Power & Paper Co., Iroquois Falls.

The two big items dealt with during 1917, under the head of lumber camp inspections, were the adjustment of the camps of the Abitibi Power & Paper Co., of Iroquois Falls, and the camps of the Mattagami Pulp & Paper Co., with headquarters at Smooth Rock Falls.

Early in January it became necessary, through continued complaints being made, to make a thorough inspection of all camps being operated by the Abitibi Power & Paper Co., these being situated on the Abitibi River between the Town of Iroquois Falls and Lake Abitibi, a distance of perhaps thirty-three miles.

Townsite Bunk Houses.

On arriving at Iroquois Falls, January 3rd, accompanied by Dr. George, the District Officer, we visited Dr. Dorsey, the company physician, who provided us with much information as well as a very candid statement as to the condition of the townsite, as well as the camps, which he claimed to be in the most unsanitary condition, but stated that owing to his position with the company there was little he could do to adjust matters, save to advise the management of the state of affairs, and ask for a remedy, which up to the time of our visit had not been forthcoming, as we found several sleep camps, situated near the general offices of the company, in a most unsanitary condition. These camps were situated on the side of a ravine which drained out almost directly over the intake pipe through which all water used in the town was pumped. The outhouses used were in a most deplorable condition; the floors, seats, and the ground in the immediate vicinity were simply covered with human excrement, which owing to the position of these closets would wash down this ravine in the spring and pollute the water supply.

Temporary Cookery Buildings.

The temporary cookery buildings, also situated on the side of a ravine, the drainage, fortunately, however, discharged into the river below the intake. The sides of this gully were simply covered with every possible description of garbage, such as old boots, clothes, rotten meat, vegetables and tin cans, and in point of quantity could rival the nuisance ground of many a large old established town. The conveniences used in the paper mill, which employs several hundred men on each shift, discharged into the river contrary to law. Such was the state of affairs found at the townsite.

Pulp Camps.

After completing my inspection of the townsite, I left on a visit to the bush camps, of which there were twenty-two in number, employing possibly in the aggregate 1,700 men. These camps (with one exception) had all been wrongly located, being much too close to the river, or upon some steep bank with a rapid descent to same, or were located on some small stream in such a manner that no provision could be made to arrest the drainage before reaching the river.

Outhouses.

The closets were of the log type, with a four inch opening between each timber, were badly located, and were mostly full of snow, therefore not in use, the men preferring to deficate wherever the bush afforded a little privacy. The vicinity of the stables had also been used as a convenience.

Disposal of Garbage.

Garbage could be found at the cookery doors or upon the river banks—no provision was made for either hauling to a safe distance or burning.

Water Supply.

The water supply for these camps is taken from the river, and at the time of my visit it could be clearly shown that each camp was polluting the supply of his neighbour; the only factor of safety was that most of the polluting matter was being held in suspension by the frost.

Stables.

The stables in connection with Camp Mustango (Camp 12 and 13), were built in such a position that during high water in spring the floor would be under water. Huge piles of manure were to be found at these stables.

Construction of Buildings.

The construction of the various buildings did not comply with the Regulations, the most objectionable buildings perhaps being the sleep camps. These were badly overcrowded, had little or no ventilation, floors constructed of rough poles squared on the top, and the bunks, instead of being built parallel with the walls, were of the muzzle loading type (that is to say, were built in rows or stalls), were double deckers, with the lower tier resting on the poles which composed the floor. Some hay or straw is thrown over these poles, a blanket is spread over the hay and the bunk is then ready for occupation.

Drainage.

It could readily be seen that the entire drainage from these twenty-two camps would come down the river during the spring freshet. This, coupled with the unsanitary sleep camps on the townsite, which I have previously mentioned as draining into the river near the intake pipe, would, if allowed to remain as they were, create a highly dangerous situation, at least during the spring months.

Order Issued by Board.

In view of the short time at our disposal to effect a complete clean-up, as well as to have a proper filtration and chlorination plant installed at Iroquois Falls as a means of protection to the users of river water, I accompanied Dr. George to Toronto, where we laid the whole matter before Dr. McCullough, who in turn considered the matter so serious as to request the presence of the president of the company at the offices of the Board, in order that he be advised of the seriousness of the situation. A conference with this official resulted in an order being issued by the Board providing that all camps on the river be cleaned up by February 15th, and that after the drive had come out they could not again be occupied until the provisions of the Regulations had been fully met. This order also provided that an adequate water purification plant be installed at Iroquois Falls, and that a thorough clean-up be started at the various cookery buildings, the objectionable sleep camps to be moved to a more suitable location, the ground in the vicinity of all closets to be put into sanitary condition and liberally treated with chloride of lime.

Provision was also made to correct the unlawful discharge from mill closets to the river, and the construction of a sewage disposal plant to be used in connection with the town's sewage system.

I might say the Board's instructions have been partially carried out. The up-river camps, while still far from being perfect, are in a much better condition, and we are hopeful that another year will bring still further progress.

Improvements Accomplished.

The water purification plant was installed within the time set by the Board, and unquestionably was the saving factor, as no cases of typhoid were reported from the townsite due to the use of river water, but in the "Wye Settlement" adjoining, where river water is used untreated, a large number of cases occurred, with several deaths.

The changing of the closets in the mill and the construction of a sewage disposal plant has not yet been attempted, due I understand to the shortage of labour and other causes. I understand an extension of time in this connection has been granted.

Re Camps of the Mattagami Pulp & Paper Co., Smooth Rock Falls.

Inspection during February, 1917, of the camps of the Mattagami Pulp & Paper Co., of Smooth Rock Falls, disclosed a most interesting as well as a serious problem. The woods operations of this company are in the hands of a contractor, who builds his own camps, brings in his own men, and delivers the wood at so much per cord at the river bank. The contractor referred to is from the Province of Quebec and began operating in Ontario in the fall of 1916. Three hundred and fifty men which compose his bush staff were imported from the Lake St. John district of the same province, bringing with them many of the customs of that district which do not seem to fit in with our Ontario laws.

Camps Operated by Contractor.

This contractor operated twenty-six camps during 1917, situated chiefly on the Muskego and Mattagami Rivers south of the townsite of Smooth Rock Falls, where the pulp mill is situated. The methods used in building and operating these camps is, I think, new to Ontario. The custom is to let small tracts of bush to jobbers, who build their own camps—usually a small one-room affair which does duty for cookery, dining room and sleep camp. The stable I found in many cases was attached or lean-to. No closets were provided except in a few isolated cases, where some spruce branches had been stuck in the snow to afford a little privacy. An added feature to this method of operation is, the jobber as a rule brings in his wife and family. In many of these camps could, therefore, be found the sub-contractor, his wife, eight children and from six to fifteen men living in a small one-roomed camp, the cubical air space provided per occupant being as low as 100 cubic feet, and in no case did I find provision made for more than 300 cubic feet.

The camps for the most part were built as close to the river as possible—so close indeed that some had to be abandoned before the spring break-up, the floors being under water.

Notice Served on Contractor.

As may be seen from the foregoing, not one of these camps could possibly comply with our Regulations in any respect, particularly in the matter of location (the most serious matter from a public health view-point), some being scarcely ten feet from the water's edge and very few over fifty feet. Here, then, was a problem—the adjusting and re-establishing of these camps in order that sufficient protection could be given the users of river water at Smooth Rock Falls. Two courses were open to us: Firstly, the camps could be closed up, as they were being operated without the approval of your Inspector, or they could be cleaned up as thoroughly as possible, and closed at the end of the season (two months distant). To close these camps during the lumbering season meant a very serious loss to the contractor, as well as to cause a very considerable shortage of wood at the mill, and in view of this being the company's first season's operation, coupled with the lack of knowledge of Ontario requirements, we decided to try to have a thorough clean-up started of the camps themselves and the immediate vicinity, and to have them kept in sanitary condition until the end of the season, but under no conditions could they be used the next year. A notice was served on the contractor to this end, but although I made two inspections after the service of this notice, I cannot say that my instructions were carried out, although considerable work was done.

Request by Company to Inspect Camps.

Early in November I was requested by the management of this concern to inspect the camps from which the contractor expected to operate during the 1917-18 season, Dr. Wright, the company physician at Smooth Rock, to accompany me and report to the president, who appeared to be anxious to avoid friction with the Board if possible. On this trip we visited fifty-two camps, placed at intervals on the Mattagami River and two small streams between Timmins and Jacksonboro, a distance of possibly seventy-five miles.

The camps visited near Timmins were new and had only been occupied some two months previous to my visit. In these I noted some improvement over those of last year, such as stables had been built at some distance from the main buildings and log closets had been erected in a number of cases, but the location of the camps in general was bad, being much too close to the river. Inspection of the lower end of the Muskego and Mattagami Rivers disclosed the fact that the camps which the previous season were ordered to be closed, were again operating with practically no changes. This I reported to the Department, and the action in this regard will be dealt with in the report for 1918.

Conclusions re Inspection of Lumber Camps.

In order to apply the Regulations governing unorganized territories as well as to devote some time to the formation of sanitary measures in the numerous small towns and villages situated therein, I wish to present certain conclusions which have become apparent during 1917. Firstly, it has been shown we have 173 lumbering companies in the Province, with a total of 500 camps. The number of inspections made during the year was 113, or including the extra visits in connection with follow-up work, a total of 235 visits. It would therefore appear reasonable to say that, at this rate, it will practically take me three years to inspect the number operating this year.

Information to be Filed Earlier.

In the matter of forwarding medical agreements, camp sketches and general information so highly desired by the Board for statistical purposes, it has been customary in the past to accept these when sent, with the result that while most companies begin work in the fall, much of this information only reaches us when the season is so far advanced as to make it of little value, with the result should there be any omissions, or should the location be a dangerous one, we have very little chance to correct matters the same season. Some arrangement must be made to force these companies to file the required information not later than October 31st in each year. The more serious cases can then be dealt with and adjusted before spring.

Forms Should be Provided.

I believe also much valuable time can be saved by providing a draft form of agreement to be used by contracting physicians or companies. A form with the principal points on which we desire information should also be provided. It has been my experience that fifty per cent. of the medical agreements, camp sketches and other information which has passed through my hands had to be returned for alteration or greater detail. This has of course necessitated much unnecessary correspondence and waste of time.

Physicians Should Report More Frequently.

The number of physicians who provide us with a monthly report is very small. I believe an extra effort should be made during 1918 to see that every contracting physician lives up to his agreement and forwards his reports as the law provides, and by having these reports we are able to get a fair idea of many of the camps which we are unable to visit.

Communicable Diseases.

Outbreaks of communicable diseases occurred in the following places and required my personal attention:—

Typhoid Fever.

At the Wye Settlement near Iroquois Falls, and at Deer Lake, near Sundridge.

Diphtheria.

At Kirkland Lake, Moonbeam, Hanmer and Mattice, near Hearst.

Smallpox.

At Warren in the Township of Ratter and Dunnett.

Measles.

At Espanola.

Most of these outbreaks, while serious, did not assume alarming proportions, save possibly the smallpox at Warren and the typhoid at the Wye Settlement. Both epidemics required a large number of visits from Dr. George as well as myself, and

in the case of the first-mentioned disease it became necessary to force the municipality to issue a proclamation providing for the compulsory vaccination of all residents in the two townships, with very satisfactory results.

Re typhoid at the Wye Settlement, there were some twenty cases of this disease and several deaths, which had apparently been contracted by using river water for domestic purposes, which we found was being polluted by a number of camps higher up the stream, and as no other source of supply was available, many of these residents had dug shallow wells which, owing to the impervious nature of the soil (which is clay), had become receptacles for surface water, and as the yards in which these wells were situated were in the most unsanitary condition, the quality of the water can very easily be imagined. Repeated notices served with a view to correcting conditions proved unavailing, your officials were therefore compelled (however unwillingly) to resort to police court proceedings against twenty of the residents, fines being imposed ranging from $5.00 to $20.00 and costs. This procedure, while drastic, quickly brought results, and a number of wells were closed up and a thorough clean-up instituted, but until some arrangement is made with the Town of Iroquois Falls for a supply of filtered water, there will always be the danger of another outbreak, as most of the people still use river water.

During the year I paid a visit to most of the large towns and districts save that of Sault Ste. Marie, but owing to the large number of calls upon my time, coupled iwth the exceedingly heavy office work, I was only able to remain a very short time in each.

All of which is respectfully submitted.

ALEX. R. WHITE,
Provincial Sanitary Inspector.

Report of the Provincial Medical Inspector

DR. R. W. BELL

REPORT *re* NUISANCE AT DOON.

To the Chief Officer of Health, Ontario.

SIR,—Complaint having been made about a nuisance existing at Doon, in the Township of Waterloo, I visited that place with Dr. Thomas, M.O.H., on June 14th instant, and there met the members of the Board of Health and other residents. The trouble I found to arise on Snyder's Creek a few yards above where it enters the Grand River. Here a dam was built sixty or seventy years ago to retain the water to furnish power for a mill, which, however, has been out of existence many years. The retained water covered the low banks of the creek to the extent of eight to ten acres, property now owned by Mr. Jacob Cluthe. Recently Mr. Cluthe opened the dam and ran the water off, leaving these acres uncovered and on which there is a deep deposit of sludge, said to come from the sewage disposal plant at Kitchener, creating a very offensive odor. As this material dried on the surface, hundreds of cracks 12 to 15 inches deep opened up into small sections of 1 to 2 feet across and these again cracked open 2 or 3 inches deep into many smaller sections, giving it a most peculiar appearance. There was little opportunity of it ever drying out to the bottom, which in a good part would be below the creek level and in all cases would absorb and retain much rain water, so keeping up the stench. A large petition signed by residents in the locality was presented to the local Board of Health asking to have the nuisance abated.

The uncovered acres did not seem at all suitable for cultivation and no one knew why Mr. Cluthe had drawn off the water. He had been spoken to about the matter but had declined to close the dam and reflood the pond. I did not see Mr. Cluthe as he was not at home. As the nuisance existed on his property I pointed out how he could be dealt with in the Public Health Act, but we all agreed that before taking any legal action, another effort should be made by the local Board to get him to reflood the pond and keep it covered, as it could be done at little or no expense and seemed to be the only feasible method of abating the nuisance.

I have since learned from Dr. Thomson that Mr. Cluthe has consented to make a slight necessary repair to the dam, reflood the pond and put an end to the nuisance.

R. W. BELL,
Provincial Medical Inspector.

Toronto, June 25th, 1917.

REPORT *re* SUMMER RESORTS.

To Dr. J. W. S. McCullough, Chief Health Officer, Ontario.

SIR,—In the early part of the season of 1917 (July) I visited Lake of Bays to see if instructions previously given *re* protection of drinking water supply at one of the chief resorts had been complied with, as guests had reported nothing done, while the manager had reported all completed. I found neither report correct. The material for completion of work was on hand and had been for at least a year, and only a few hours' work required to do it, so I insisted that all be done within a couple of days or prosecution would follow. Later in August this same resort was again visited and the work found satisfactory. Complaint had, however, been made in the meantime of an unsanitary garbage dump at this resort. The manager assured us (I was then accompanied by Dr. Clinton, District Officer of Health) that there was nothing of the kind, all the garbage being buried daily, but not being satisfied we instituted a search and discovered a few hundred yards from the hotel, among some bushes near the lake shore, the most disgusting and unsanitary garbage dump I had ever seen. The garbage of several weeks, foul smelling and sour, with millions of flies, was there and had never been covered. This of course we had remedied in short order.

In July I also visited Pt. au Baril on Georgian Bay because of complaints *re* pollution from various cottages. Here I found complaints very much exaggerated and no cottages at all, where we had been informed the most serious conditions existed.

Three private cottages were visited and at all conditions were fairly satisfactory. Two fishermen's islands, however, were far from satisfactory and the necessary instructions were given for immediate improvement.

Honey Harbor and Go Home on Georgian Bay were also visited and conditions satisfactory.

Later in the season it was deemed advisable to make a thorough inspection of all resorts on the Muskoka Lakes, Lake of Bays and Sparrow Lake. Dr. Clinton, District Officer of Health, accompanied me on this trip in August, as he had done on my last thorough inspection in 1914. During the seasons 1915 and 1916 one or other of us had made several isolated inspections in these districts.

Between August 9th and 23rd we visited on Lake Muskoka and Indian River 15, Lake Rosseau 20, Lake Joseph 10, Lake of Bays 33, Sparrow Lake 14. We found several places visited three years before, closed (about six or seven), three large resorts burned and not rebuilt, with at least three formerly closed, reopened. The season 1916 had been rather an off year, tourists much reduced in number, but the present year found nearly all resorts full to capacity. Sanitary conditions were fairly satisfactory on the whole, but there were a few exceptions. Many places still lacked screenings of windows, especially of dining-rooms and kitchens, while several screened bedroom windows only.

Flies this season were comparatively few, in fact of so little annoyance that screens, although on hand, were not put in.

The abominable outside pit closets are still in use at several resorts, and even where the flush system exists there is often an outside pit as well. We have resorted to everything but prosecution to have these abolished and have dry earth closets substituted, but while meeting with fair promises for the change, future visits find

the old state of affairs still existing. I think it will be necessary to make an example of some of the persistently negligent delinquents.

Garbage as a rule is well disposed of, either by being fed to animals, buried or burned. A notable and most surprising exception was the case mentioned in the early part of this report. Laundry work is occasionally done on the water bank, but this we have pretty well stopped.

All in all, there is a reasonable desire on the part of most proprietors to conform to our regulations, which are for their own benefit as well as the protection of the general public, but a yearly inspection is certainly necessary in some cases.

Details as to surroundings and sanitary conditions existing at each place visited are in my possession and available for your information if required.

R. W. Bell,

Provincial Inspector of Health.

Toronto, October, 1917.

Report of the Provincial Sanitary Engineer

F. A. DALLYN, B.A.Sc. C.E., (Tor.)

TORONTO, July 8th, 1918.

Chairman and Members of the Provincial Board of Health, Ontario.

GENTLEMEN,—I have the honour to transmit herewith my annual report for the year 1917.

During the year the following certificates have been issued. The extension of water and sewerage works amounted to the sum of $2,880,534.72, made up in the following manner:—

Waterworks extensions	60	certificates	$561,391.65
New waterworks	16	"	987,407.59
Water purification	7	"	275,286.27
Sewer extensions	88	"	671,558.71
New sewerage systems	7	"	153,419.50
Sewage disposal works	8	"	231,471.00
	186		$2,880,534.72

This is an increase over last year and denotes very decided expansion in the smaller centres over the previous year. The improvement is actually greater than it appears, owing to the fact that the extensions to sewerage and waterworks for the City of Toronto only amounted to $82,367.00 and $84,706.59 respectively, as against $574,888.56 and $18,435.22 in 1916, and $927,835.85 and $263,692.27 in 1915. A great deal of the increased expenditure from the outside towns comes from the activities of the Metropolitan district along the Detroit River, and the balance is general activity amongst the smaller towns extending sewerage systems and putting in house connections to sewers.

The Plumbing By-law has been further revised and brought to what appears to be a satisfactory conclusion. The subject is dealt with in some forty-five pages and the material sub-divided into 250 sections. It deals with sanitation in rural sections without sewers, local organization in urban communities, plumbing inspection, details of and minimum requirements for the installation of plumbing, not only in urban centres, but in the province and rural communities generally, and with the standardization of the weight of fittings, drainage pipe, etc., required for and generally used in this class of work.

The amount of labour involved in the regulations respecting sanitation (plumbing, etc.) has been considerable, but it is felt that the advantages will more than counterbalance our effort in the matter. The advantages to be derived from the Regulations are that with the general improvement of property evidenced, not only in urban communities but in rural communities as well, the work of installing sanitary conveniences, of the water carriage type, will be carried on in a sane and proper manner and that this expansion will not be subject to exploitation. Plumbers, after the passing of the Regulations, will not be able to obtain business in competition through the use of inferior materials and inferior workmanship,

either of which are exceedingly expensive in the end and subject the owners to considerable risk for nuisance.

The study of the relation between water supplies and typhoid fever in the Province has been continued, and the provincial situation to-day is in general a most satisfactory one. Chlorination plants are installed in the towns listed in Table No. 1, filtration plants are in use in those municipalities shown in Table No. 2 and Table No. 3 represents towns using water coming from springs and artesian wells and not subject to contamination of moment.

At the present time, before any definite statement may be made of our continued typhoid toll, we require a somewhat more careful compilation by the local boards of case histories. It appears in many municipalities that the typhoid is continued by sporadic outbreaks connected with the distribution of food, milk supplies and ice cream, and is due to a large number of carriers who are in the province as a consequence of outbreaks in other parts of the country, and who survive as a heritage of the high typhoid rate of some ten years ago. Each case of typhoid in the Province should be very carefully traced to its source, and, as far as possible, reported to the Board. In this way it is believed that the number of carriers may be better estimated and some means may be taken later for keeping carriers under surveillance.

It is also suggested that the Medical Officers of Health for those towns which are hospital centres should indicate definitely in their annual returns to the Board the number of cases and deaths from typhoid fever which belong to outside centres, but which were treated locally at the hospital.

The operation of chlorination plants throughout the Province appears to be reasonably well supervised. Considerable improvements have been made during the year and will continue to be made, both in the apparatus for feeding the solution to the water and in the facilities which are being offered municipalities for obtaining supplies of chemicals. A noteworthy effort in this connection is being made by the General Supply Company of Canada, who are maintaining a plentiful supply of liquid chlorine in cylinders at their Ottawa distribution station, from whence it can be very readily expressed to any part of the Province in urgent need.

The result of the Board's publication of the alum requirements of water purification plants in Ontario has been very satisfactory, and municipal contracts have been entered into with manufacturers at very much improved prices and for a quality of material satisfactory for the local needs.

Your engineer has been in attendance at various sittings of the International Joint Commission respecting the pollution of boundary waters, and it appears most probable that joint action on the part of the two Governments will be taken shortly, for the purpose of further protecting boundary waters from undue pollution by the towns draining sewage thereto. The Board may congratulate itself as having encouraged this matter and assisting in the early efforts as it did by offering its personnel in 1913 for the purpose of investigating the extent of pollution of boundary waters.

The urban municipalities are beginning to appreciate more fully the advantages of municipal collection of refuse, garbage and night soil, and there appears to be a general tendency towards the municipality contracting for such services and the costs, for the property benefited, are collected at tax rates. Persistent efforts, both on the part of the Board and our District Officers of Health, to whom no little credit is due, are gradually bringing about a general adoption of that method.

A careful census shows that when the collection is by arrangement between property owners and a collector there always remains a few neglected properties

which act as fly breeding nuisances and which undo the efforts of the adjoining property holders to control this pest. Compulsory municipal collection is the only satisfactory method yet advanced.

During the year your Engineer's staff has been further depleted by the loss of Mr. DeLaporte and Mr. Berry, who have gone overseas with His Majesty's forces.

Visit of Inspection to England.

It is but proper that your Engineer should express his appreciation of the honour of visiting England and Scotland for the purpose of inquiring into and inspecting municipal improvements controlled by the Local Government Boards of England and Scotland. I left Canada December 4th, 1916, and returning left England about March 1st, 1917.

An inquiry was had into the procedure of the Local Government Board, with reference to applications for approval of the local improvements, at present prescribed in the Public Health Act, Ontario, special inquiry being made with reference to applications to sanction the borrowing of money for water supply, waterworks, and for sewerage purposes.

The procedure of the Local Government Board upon receipt of an application is to appoint an inspector, authorize him to hold an inquiry at the municipality making application. Notice of the inquiry and place of meeting is stated in a printed proclamation, prepared by the Local Government Board, which is tacked up at suitable places, where it will attract the notice of those interested in the inquiry. At the inquiry the inspector has the authority to receive the evidence of any persons interested in the matter of the said inquiry.

The inquiries which follow a procedure which is quite old have resulted in considerable benefit, both to the municipalities affected, to the works, and to the Local Government Board itself.

There is claimed a certain advantage, possibly more imaginary than real, in the holding of public inquiries, and it is that the publicity of an inquiry lends itself to a well considered newspaper comment, which theoretically would tend to place the *full facts* of the proposed improvements before the citizens, who, on ultimate analyses, must bear the brunt of the expense, and to a very large extent do away with ill-considered improvements and improvements which are somewhat too far in advance of local requirements. Unfortunately, this has not always been the Board's experience in Ontario and occasionally petty politics introduce a great deal of idle discussion; however, time may teach us better and inquiries might be held after the English fashion and made elastic enough to receive evidence, in addition to that bearing upon the subject matter, with reference to needed improvements in other portions of the municipality; that is, improvements which, in the opinion of the witness, should take precedence over that limited in the inquiry. Generally, the effect of inquiries supplemented by a judicious newspaper publicity, should improve the status of the Board, always bearing in mind the proper calibre of man for inspector, and would tend to restrain speculative expansion, and elevate and popularize news items in connection with municipal improvements.

It is an open question whether for the purpose of the Public Health Act it is necessary to go into the detail of costs and quantities, as is shown by both the forms of the Local Government Board and even those now in use by this Board. The only sound objection that might be raised is that the forms of the Board do not remotely coincide with the manner in which the cost data records are kept by

the municipality, and entail needless duplication. This might be a very proper objection were it not conveniently possible for the municipalities themselves or for the municipal engineers of the Province to meet and agree upon the manner of keeping cost data, which could then be co-related with application forms required by the Board.

The real reason for going into detail in the estimate and plans is that it assures the compilation of complete municipal records—records which, properly taken advantage of, lead to many economies in the municipal administration and in the sub-division and letting of contracts. For of late years there is evidence of a general movement towards the standardization of fittings and material and towards improved methods of construction. This movement is the result from the co-operation of the various municipal improvement societies and engineering bodies devoting time and thought to municipal improvements, waterworks, and other public utilities.

Any requirement of the Board calling for technical information and tending to enhance the public character of the municipal engineer and emphasize his function in protecting public moneys, in letting of contracts (which in Ontario amount to not less than $10,000,000 annually), should result in a very decided improvement of the general tone of public administration, and this has been amply evidenced in the work of the Board during the past five years.

CHLORINATION PLANTS

List of Municipalities in Ontario Using Chlorine to Protect the Water Supply

Name of Municipality	Date Chlorination Was Established	Amount of Water Treated Per 24 Hours 1916	Source of Water Supply and Preliminary Treatment
Amherstburg	Dec., 1912	500,000	Detroit River, None
Belleville	Feb., 1916	1,756,547	Bay of Quinte, None
Brantford	Mar., 1914	2,225,917	Grand River, Partial Filtration
Brockville	1912	2,764,114	St. Lawrence River, none
Chatham	Oct., 1912	884,163	Thames River, Filtered
Cobourg	1917		Lake Ontario, Filtered
Collingwood	Jan., 1917	793,065	Georgian Bay, None
Dundas	1917	500,000	Dundas Creek, Filtered
Fort Frances	1912	342,460	Rainy River, None
Goderich	1916		Lake Huron, Twelve Hours' Sedimentation
Grimsby	1916	350,000	Lake Ontario, Approx. Hours' Sedimentation
Haileybury	1914	270,000	Lake Temiskaming, Filtered
Kenora	1912		Lake of the Woods, None
Kingston	1912		Lake Ontario, None
Lindsay	1918		Scugog River, Filtered
New Toronto	1915		Lake Ontario, Filtered
Niagara Falls	1913	3,400,000	Niagara River, None
Niagara-on-the-Lake	1915	150,000	Niagara River, Filtered
Oakville	1914		Lake Ontario, Several Days' Sedimentation
Orillia	1912	684,152	Lake Couchiching, Filtered
Oshawa	1916	500,000	Lake Ontario, Filtered
Ottawa	1912	20,000,000	Ottawa River, None
Parry Sound	1916	367,123	Georgian Bay, None
Pembroke	1914		Ottawa River, None
Perth	1915	500,000	Tay River, Filtered
Peterborough	1916	3,021,870	Otonabee River, None
Port Arthur	1913	2,377,800	Thunder Bay, None
Renfrew	1915		Bonnechere River, Filtered
Sarnia	1912	4,321,250	River St Clair
St. Catharines	1914	2,998,070	Welland Canal, Two Weeks' Storage
St. Thomas	1913	1,841,479	Kettle Creek and Wells, Filtered
Sault Ste. Marie	Aug., 1913	4,000,000	St. Mary's River, None
Smith's Falls	Sept., 1916	500,000	Rideau Canal, None
Strathroy	1916	240,000	Sydenham River, None
Sudbury	1915		Ramsay Lake, None
Thorold	April, 1915	376,740	Welland Canal, Five Days' Storage
Toronto	April, 1909	50,310,000	Lake Ontario, Filtered
Walkerville	April, 1913	2,500,000	Detroit River, None
Welland		1,400,000	Welland Canal, None
Weston	1916		Humber River, Filters
Windsor	Jan., 1913	7,183,267	Detroit River, None

ENGINEERING SERVICE,
Provincial Board of Health of Ontario.

WATER PURIFICATION
ONTARIO

LIST OF MUNICIPAL FILTER PLANTS

Name of Municipality	Source of Supply	Character of Raw Water	Type and Description of Equipment
Arnprior	Madawaska River	Colored, receives agric. drainage.	Pressure Filter, one 8 x 20 horizontal unit.
Chatham	Thames River	Turbid, highly polluted with sewage.	Pressure Filters, settling basin, eight 8 x 20 horizontal units.
Cobourg	Lake Ontario	Periodically turbid, drainage.	Pressure Filters, three 8 x 20 horizontal units.
Dundas	Catchment Area	Colored, receives agric. drainage.	Gravity Type, Rapid Sand, one unit 12 x 10.
Dunnville	Grand River	Turbid, hard, polluted sewage	Pressure Filters, one 8 x 20 horizontal unit.
Haileybury	Lake Temiskaming	Colored, highly polluted sewage.	Pressure Filters, five 8-foot vertical units.
Kitchener	Deep wells, plus catchment area	C. A. receives agric. drainage.	Gravity Type, Rapid Sand, one unit 14 ft. 0 in. dia. for treating spring water.
Lindsay	Scugog River	Colored, receives agric. drainage.	Pressure Filters, five 8 x 18 horizontal units.
New Toronto	Lake Ontario	Periodically turbid, polluted.	Pressure Filters, four 8 x 16 horizontal units.
Niagara-on-the-Lake	Lower Niagara River	Turbid, highly polluted sewage.	Pressure Filters, three 8 x 16 horizontal units.
Orillia	Lake Couchiching	Periodically turbid, minor pollution.	Pressure Filters, five 8 x 18 horizontal units.
Oshawa	Lake Ontario	Periodically turbid, receives sewage and drainage.	Gravity Type, Drifting Sand, four 12 x 12 units.
Perth	Tay River	Colored, turbid, agric. drainage.	Pressure Filters, two 8 x 25 units.
Port Hope	Lake Ontario	Periodically turbid, sewage and drainage.	Slow Sand Filter, area, one-fifth acre.
Renfrew	Bonnechére River	Periodically turbid, colored drainage.	Pressure Filters, four 8 ft. dia. vertical and one 8 x 25 horizontal unit.
St. Thomas	Springs and Creek	High iron content, algæ	Pressure Filters, six 8 x 20 horizontal units.
Stratford	Wells and Avon River	Periodically turbid, drainage.	Pressure Filters, six 8 x 20 horizontal units.
Toronto	Lake Ontario	Periodically turbid, sewage pollution.	Slow Sand, twelve 1/8 acre units and Drifting Sand Filters, 60,000,000 gals. per 24 hours.
Wallaceburg	St. Clair River	Minor sewage pollution.	Pressure Filters, two 8 x 14 horizontal units.
Weston	Humber River	Colored, sewage and drainage	Pressure Filters, three 8 x 20 horizontal units.

PROJECTED PLANTS

Amherstburg	Detroit River	Periodically turbid, highly polluted.	Gravity Type, Rapid Sand.
Hawkesbury	Ottawa River	Colored, highly polluted.	Gravity Type, Rapid Sand.
Ojibway	Detroit River	Periodically turbid, highly polluted.	Gravity Type, Rapid Sand.
Rockland (under construction)	Ottawa River	Colored, highly polluted.	Pressure Type, two 8 x 20 horizontal units.

ENGINEERING SERVICE
PROVINCIAL BOARD OF HEALTH OF ONTARIO

SPRINGS AND ARTESIAN WELLS

ONTARIO

List of Municipalities in Ontario using Well-protected Springs and Artesian Wells as Sources of Municipal Water Supply

Name of Municipality	Population 1916	Quantity of Water Used Per 24 Hours	Per Capita Consptn.	Name of Municipality	Population 1916	Quantity of Water Used Per 24 Hours	Per Capita Consptn.
Alliston	1,366	125,000	73	Mount Forest	1,941	42,000	
Aurora	2,401	120,000	50	New Liskeard	2,041	140,000	68
Aylmer	2,271	150,000	66	Orangeville	2,493	Not known	
Allandale and Barrie	6,453	220,000	34	Palmerston	1,843	300,000	162
Beamsville	1,050	50,000		Paris	4,370	325,000	74
Beeton	641	50,000	70	Parkhill	1,248	9,000	7.2
Bowmanville	3,655	45,000	12	Port Elgin	1,348	30,000	
Bracebridge	2,803	85,200	30	Preston	4,643	200,000	
Brampton	4,041	240,000	59	Ridgetown	2,329	31,000	13
Chesley	1,975	200,000	101	St. Marys	3,958	250,000	63
Clinton	2,177	50,000	24	St. Thomas	17,174	1,753,861	102
Coldwater	579	60,000		Shelburne	1,115	50,000	44
Elmira	2,270	40,000	17	Steelton	5,393	720,000	133
Essex	1,462	65,000	44	Stratford	17,081	1,396,522	81
Fergus	1,772	40,000	22	Stouffville	1,014	60,000	
Galt	11,852	1,000,000	92	Tavistock	1,009	14,000	13 8
Georgetown	1,905	76,000	40	Trenton	5,000	200,000	40
Guelph	16,735	1,900,000	113	Uxbridge	1,765	60,000	
Harriston	1,404	40,000	28	Walkerton	2,995	80,000	
Kitchener	19,266	1,105,526	57	Waterloo	4,956	600,000	121
Leamington	3,364	175,000	52	Wingham	2,444	240,500	98
London	58,055	4,620,000	78	Woodstock	10,084	1,406,456	182
Mitchell	1,687	260,000	154				

ENGINEERING SERVICE,
Provincial Board of Health, Ontario.

APPROVALS ISSUED, 1917

Waterworks Extensions.

Municipality	No. of Certificates issued	Estimated Costs	Municipality	No. of Certificates issued	Estimated Costs
		$ c.			$ c.
Aurora	1	8,000 00	Oshawa	1	5,670 00
Brantford	1	101,700 00	Peterborough	2	18,565 37
Chesley	1	3,000 00	Port Arthur	2	28,619 10
Fort Frances	1	1,518 47	Prescott	1	955 00
Fort William	1	762 68	Preston	2	3,575 90
Galt	2	18,558 53	Renfrew	3	16,733 68
Grimsby	1	9,020 52	St. Marys	1	4,112 00
Hamilton	5	12,834 43	Sandwich	1	1,465 00
Hespeler	1	8,082 03	Smith's Falls	2	2,091 50
Leamington	1	22,752 00	Stratford	1	11,846 10
Leaside	1	3,000 00	Sudbury	4	54,292 73
Lindsay	1	60,000 00	Timmins	1	8,602 00
Massey	1	1,458 90	Toronto	10	84,706 59
Midland	1	1,822 00	Welland	2	1,509 50
New Liskeard	1	6,000 00	Weston	1	2,729 00
New Toronto	5	55,454 74			
Oakville	1	1,953 88		60	561,391 65

New Waterworks.

Cobourg	1		New Toronto	1	29,585 00
Grimsby	1	7,863 27	Ojibway	1	235,000 00
Hamilton (Beach Pumping Station)	1	127,250 00	Port Dover	1	65,000 00
Military Convalescent Hospitals	2		Sandwich East	4	55,350 39
			York Township	4	467,358 93
				16	987,407 59

Water Purification.

Amherstburg	1	80,000 00	Oshawa	1	38,000 00
Lindsay	1	37,126 00	Strathroy	3	25,860 27
Ojibway	1	94,300 00			
				7	275,286 27

Sewerage Extensions.

Municipality	No. of Certificates issued	Estimated Costs	Municipality	No. of Certificates issued	Estimated Costs
		$ c.			$ c.
Belleville	1	1,671 00	Prescott	1	2,868 75
Brampton	1	.....	Preston	2	13,495 13
Brockville	1	12,640 00	Renfrew	2	26,378 80
Chatham	1	8,294 70	St. Catharines	4	156,653 06
Galt	3	5,742 06	Sandwich	4	2,881 41
Goderich	1	2,916 00	Sandwich, East	1	11,837 11
Guelph	1	2,985 05	Sarnia	6	35,788 85
Hamilton	6	78,497 45	Simcoe	1	16,484 62
Kingston	2	877 00	Smith's Falls	10	18,498 55
Kitchener	2	3,019 54	Stratford	2	3,319 35
Lindsay	2	15,880 93	Sudbury	2	1,882 43
London	5	33,106 42	Thorold	1	1,754 00
New Toronto	2	34,755 90	Toronto	2	82,367 25
Niagara Falls	2	6,988 70	Waterloo	2	877 21
North Bay	1	4,916 00	Welland	2	5,424 83
Oshawa	1	1,130 00	Windsor	3	34,498 96
Ottawa	3	16,536 54	Woodstock	1	900 00
Parry Sound	1	.....	York Township	2	2,620 76
Perth	2	1,070 35			
Peterborough	2	22,000 00		88	671,558 71

New Sewerage Systems.

Bruce Mines (Sewerage and water for School)	1	3,500 00	Iroquois Falls	1	10,000 00
Campbellford	1	2,308 00	Military Hospital (London)	1	.....
Cornwall Twp. (Lorneville and Gladstone)	2	1,239 50	Ojibway	1	136,372 00
				7	153,419 50

Sewerage Disposal Works.

Crystal Beach Co	1	10,545 00	Invererie Hotel (Pt. Stanley)	1	.....
Essex Border Utilities Commission	1	210,300 00	Robson Leather Co. (Oshawa)	1	.....
Kitchener	1	8,326 00	Sudbury	1	2,300 00
Pembroke	1	.....			
International Nickel Co. (Pt. Colborne)	1	.....		8	231,471 00

ACTON TANNERY

I have the honour to report that upon request of Dr. Nixon, of the Township of Esquesing, an inspection was made of the Messrs. Beardmore & Co., of Acton, tannery, for the purpose of inquiring into the manner of disposing of their tannery wastes and to determine whether further improvements are necessary.

The waste disposal works were originally constructed upon recommendation of Dr. Bruce, 1891, and since then have been extended from time to time. The present works are of considerable magnitude and well designed for the purpose of disposing of tannery wastes. Certain improvements are, however, immediately advisable: (1) The construction of a large concrete storage tank to replace the existing wooden tank at the pump house; the present wooden tank is in bad state of repair, liable of collapse and permits leakage to the creek.

(2) The overflow to the original beds (really a by-pass to the creek) should be done away with and all water reaching the collecting flume should be stored in the new tank and conveyed, through the use of pumps, to the beds on the higher elevation across the stream, or to the farm, as found necessary.

(3) Spring water which is now drained to the collecting flume, on Sundays, should be intercepted by an overflow at the spring itself and conveyed direct to the stream, and (4) all water circulating through the soak pits, either during the night or on Sundays, should be taken to the pump well and pumped to the upper beds, and under no consideration should this liquor be allowed to find its way either direct to the river or to the old beds, whether it appears clear or not.

(5) In view of the potential danger from infected hides, notices should be posted that workmen must not throw fleshings and material accumulating in the main collecting flume into the creek, especially fleshings and material draining from the soak pits. The present arrangement for cleaning the flume is not very convenient. It is probably owing to this that the workmen tend to throw obstructions into the stream rather than shovel it onto the bank where it gives rise to odours. Such material should be immediately taken to the dump.

I would further suggest that the discharge main of the pump be fitted with a check valve placed between the pump and the gate valve now controlling the discharge, and that the water for priming be connected in the discharge side of the valve. There appears to be no good reason why the pump cannot be operated automatically, using electrical power, and so dispensing with the constant supervision now required for priming the pump.

F. A. Dallyn.

BURLINGTON WATER SUPPLY

Toronto, April 26th, 1917.

Burlington secures its water supply from infiltration galleries located on Burlington Beach, about one-half mile north of the canal into Burlington Bay. There are five galleries. The north well is situated about 100 feet north of the pump house and about the same distance from the lake. This well has a steel casing 36 feet in diameter and is over 20 feet deep. The south well is from 50 to 60 feet south of pump house and 100 feet from the lake. It has a steel casing 24 feet in diameter and is 20 feet deep. The concrete gallery is 30 inches wide and 100 feet long. It is located at the water's edge and is sunk 15 feet deep. The gallery is connected to the south well and augments its flow.

The beach on which the plant is located is a sand bar stretching across the west end of Lake Ontario, shutting off a portion of the lake to form Burlington Bay. This beach is supposed to have been formed by sand washed from the cliffs to the east of Burlington.

As a summer resort the beach is ideal for people of moderate means. Electric car and boat services enable Hamilton business men to spend their evenings with their families on the shore. Many people have taken advantage of the opportunity thus afforded and the beach is closely built up. Most of the houses are cheaply constructed for summer use.

Sanitary conveniences are primitive, none are fly-proof; a by-law requires the use of water-tight containers, but these, however, are not always replaced in a position to ensure the retention of all the excremental matter. Bed-room slops and other liquid wastes are disposed of on or in the sand.

Samples of water secured during the past two years from the town supply of Burlington have shown, intermittently, traces of what appeared to be sewage pollution. In addition the water, at times, was reported to have a most unpleasant flavor. Samples normally carry considerable flocculent matter in suspension, presumably Fe_2OH_3. The chlorine content was also abnormally high.

The investigation, amongst other things, was to determine the source of the high chlorine. Now as the galleries are situated at least half a mile from any established sewage main, it is inconceivable that any contamination of the water should be from other than the lake, the bay, or from the immediate vicinity. The lack of sanitary protection on the beach itself appears to be the most fruitful cause of dangerous contamination, and the examination of a privy located sixty feet north of the north well showed the ground under the container to be covered with fæcal matter. The women in adjacent houses were also observed to dispose of bed-room slops by throwing them onto the sand. These conditions might be said to be quite general in the vicinity of the Burlington water works. Whilst the sanitary survey gave evidence as to the existence of potential contamination, nothing was observed that would account for the intermittent pollution during the winter months, or for the peculiar mineral content of the water. Infiltration systems have, in the past, shown themselves peculiarly susceptible to any contamination in the resource from which they are augmented. Lake Ontario at this point is dangerously contaminated from time to time, therefore, it is quite possible that the contamination is from this source.

Analyses of water samples from the north well, southermost gallery, the lake, together with the lake itself, and the south well showed a wide variation in mineral content:

——	Lake Ontario (near pump station)	S. Gallery	S. Well	N. Well
Total Solids	146	146	209	350.4
Fe_2O_3	0.4	0.4	1.2	5.0
Cl	12.0	18.0	24	80

From this it will be seen that the water in the south gallery was, without doubt, lake water slightly modified by its passage through the sand, and that the two deeper wells situated farther back on the beach were very much more highly mineralized. The wells either were fed partially from spring water, or directly

from the lake, in which case the most plausible explanation of the mineral content probably would be that, during its passage through the sand the water becomes charged with soluble mineral matter contained in the sand, the amount of mineral dissolved being in direct proportion with the distance the water had to flow and rate of travel through the sand. Therefore, as the north well and south well are the same distance from the lake, the water flowing to the two should be approximately the same.

The galleries, which drain to the south well, were cut off, and the south well pumped out. A sample secured from the inflowing water was analyzed and compared to the north well:

—	S Well without Gallery	N. Well
Total Solids	383 p.p.m.	350.4
Fe_2O_3	4.1 "	5.0
Cl	71.5 "	80.0

As the mineral content of the water varies considerably, this comparatively close result gives considerable colour to either assumption, but samples of sand secured from lower depths showed no evidence of soluble minerals in any considerable quantity.

A test well was sunk twenty feet deep in a line with the centre of the north well, and ten feet to the north of it:

—	North Well	Test Well 16th	Test Well 17th
Total Solids	350.4	317.8	396.4
Cl	80	13.25	13.75

The high total solids in the test well samples are mostly due to the quantity of sand suspended in the samples. Pumping for half an hour seemed to diminish the quantity of sand in the water by not one iota. It is clear from the chlorine content that the water flowing into the bottom of the north well, 100 feet from the lake, was not the same as that in the sand alongside, as shown by the test well located an equal distance from the lake.

A test well was sunk in the centre of the north well. At five feet a sample of highly mineral water was obtained, which showed that the high mineral content in the town supply was due to the small quantity of the highly mineralized water rising from below into the two main wells. That the flow of mineral water is small can be shown from the dilution with lake water required to give the results obtained in the north well.

—	Lake Ontario (near pump station)	Mineral Water	North Well
Total Solids	146	3808.0	350.4
Fe_2O_3	0.4	190	5
Cl	12	1310	80

At the request of the Board of Health a further test well was driven, and evidence of mineral water below these wells was confirmed, by Mr. Percy Dawson, Superintendent of Waterworks for Burlington. Mr. Dawson, upon sinking a test well fifteen feet deep in the north well, struck a small pocket of natural gas. Time has not lessened the intrusion of mineral water, judging from the records of the past few years, and steps should be taken to seek another source of supply.

It is possible to get water on this shore without contamination by mineral water. This is shown by the fact that the water in the concrete galleries, sunk to a depth of only fifteen feet at the water edge, and also at the well which supplies the residents of Burlington Beach, also sunk to only fifteen feet, show very little variation from the lake:

—	Lake Ontario (near pump station)	Concrete Gallery	B. Beach Well
Total Solids	146	146	214
Fe_2O_3	0.4	0.4	0
Cl	12	18	27

Conclusion.

(1) The Burlington water supply is practically rendered unfit for use as a domestic supply by the presence of mineral water rising from underground sources to the two main wells. If the present system of securing water is to be continued the flow of mineral water from below to the steel wells should be eliminated, and water collected in galleries not lower than fifteen feet below water level.

(2) The Burlington town water supply, in addition, is subject to pollution from sanitary drainage. The pollution is partially caused by lack of proper sanitary conveniences. To safeguard the water supply all cottages within 150 feet of the wells should be removed. *The area so cleared should be adequately fenced and trespassing for any purpose whatsoever absolutely prohibited.* The by-law respecting collection of night soil should be conscientiously enforced by the adjoining municipality.

Chlorination can be resorted to if there should, at any later date, prove to be pollution entering from the lake.

A. V. DeLaporte.

ANALYSIS IN PARTS PER MILLION

	Lake Ontario, Jan. 1917	Lake Ontario, Nov. 1916	Burlington Bay adjacent to Pump House	South Gallery	South Well	North Well	Burlington Town Tap	Test Well 57' deep in centre of North Well	Test Well and North Well sunk by Mr. Dawson	Test Well 10' North of N. Well, 20' deep, Nov. 16th	Test Well 10' North of N. Well, 20' deep, Nov. 17th	South Well with gallleries cut off	North Well pumped to 18" on the gauge	Burlington Bay by the Screw Company	Burlington Beach Water Supply
Total Solids	161	146	210	146	209	350.4	289	3808	3358	317.8	396.4	383	689	904	214
Loss on Ignition	58	5	84.8	47	49	146.4	107.4	984	.....	65.8	63	85	230	209	67
SiO_2	6	10	6	1	4.5	1.6	2.2	368.8	.....	79.2	144.2	3.2	18.2	41	2
Fe_2O_3—Al_2O_3	3	14	7.2	1	4.4	9.6	4.2	244.8	.....	29.2	39.6	4.2	26.6	197	1
Fe_2O_3	0.0	0.4	0.9	0.4	1.2	5	4	190	65	2	10	4.1	15	32	0
CaO	61	50	39.4	16	39	19.6	100.6	722.4	1199	107.8	108.2	129.2	98.2	140	71
Na_2O—K_2O	7.8	7.4	19.2	32.3	38.4	36.17	1.13	56.7	663.0	6	6.65	14.8	22.8	64.6	27.4
MgO	5.06	29.3	21	32	31.7	39.4	15.7	133.3	14.35	12.6	13	29.3	22.5	4.63	4.6
SO_3	8.57	15.09	13.4	6.9	16.06	13.72	5.4	13.4	12.89	10.7	12.07	19.6	31.2	182.4	13.7
Cl	14	12	16	18	24	80	64.3	1310	1022	13.25	13.75	71.5	86.9	55	27

COBALT WATER SUPPLY

Acting on instructions from the Chief Officer of Health for the Province, I made an investigation into the cause and effect of the Private Bill of the Town of Cobalt asking for absolute control over the water-shed of Lake Sasaginaga, Graham Lake, Clear Lake and Pretty Lake I beg to report upon conditions as I found them as follows:

The water rights in this area were as far as can be ascertained, originally obtained by the J. R. Booth Lumber Company by grant from the Crown. This firm constructed a dam at lower end of the lake to regulate the water level and facilitate lumbering operations. McCamus & McKelvee, of New Liskeard, bought from the J. R. Booth Company the rights to this section but it is difficult to ascertain whether this firm have maintained their privileges.

About 1905 or 1906 under the Mining Act and by Provincial Charter certain mining companies operating in the Cobalt District began to take water from Lake Sasaginaga for use in their mills. In 1906 the Buffalo Mining Company ran a small pipe line down through the town to supply water for the citizens of Cobalt. In 1910 the town installed a temporary water system taking the water from Lake Sasaginaga but they had not acquired any rights on this lake. It is estimated that the average consumption for the town during that year would be somewhat less than 100,000 gallons per day. In 1910, the water in Lake Sasaginaga became so low that the mines using water from this lake organized the Mines Water Supply Company which operating under Provincial charter repaired the dam and installed a pump to pump water from Mud Lake into Clear Lake whence it drained into Lake Sasaginaga and maintained the water level in that lake. Each mining company interested in the water supply paid for the water pumped on the basis of the water consumption in the respective mills. In January, 1911, a meeting of the Water Commissioners of Cobalt and the Mines Water Supply Company was held when a verbal agreement was made whereby the Mines Company was to maintain the water level in Lake Sasaginaga. When the agreement was drawn up and signed by Mayor Lang for Cobalt, the Mines Water Supply discovered that they were supposed to maintain the water level constant, no matter how much water the Town of Cobalt took from the lake. The agreement was never signed, the contention of the Mines Water Supply Company being that the verbal agreement was to maintain the water level constant with the quantity of water which Cobalt was then using (100,000 gallons per day) and that the town was to pay for water used in excess of that quantity in the same proportion as the mining companies.

The Cobalt Water Commissioners paid their share amounting to about $200.00 in 1915 and $600.00 in 1916. The amount paid figured up to 15 per cent. of the cost of pumping the water, the percentage each corporation was to pay being decided by an estimate of the water used at the respective mills and in the town by an independent engineer. The town maintains that they should not have had to pay this, that the water in this catchment area belongs by right to the public and that the town is entitled to all the water it needs without having to pay for it. This claim the Mines Water Supply Company admits, but they maintain (1) that the average consumption for the Town of Cobalt per day is greater than the amount of water available: (2) the excess water consumed by the town is being supplied by the company; and (3) that the town should pay for the extra water which they use.

The area of the watershed estimated by the engineer for the Corporation of the Town of Cobalt is 1,046.9 acres. The average precipitation per year for a period of over 20 years is 31.70 inches; this will give an average precipitation of the watershed of 753,233,394.3 gallons. If 50 per cent. is allowed for run-off, evaporation and general loss, the quantity of water available will be 376,616,697.1 gallons per year. The number of gallons used by the Town of Cobalt during 1916 was 427,630,000 or 51,000,000 gallons in excess of the water available.

These figures corroborate the figures obtainable from other sources. In 1914 the Mines Water Supply Company, in order to adjust the amount that each mining company should pay for the cost of pumping, had an independent engineer make an estimate of the quantity of water used by each mine. Mr. Neeland of the firm of Sutcliffe & Neeland made the report. He estimated that the amount of water being pumped from Mud Lake was 1,780 Imperial gallons per minute and the amount of water being used by the mines was 1,585 gallons per minute. His figures for 1914 are accurate enough for present use. He figured that the Buffalo Mining Company used 340 Imperial gallons per minute and the Coniagas 309 Imperial gallons per minute, the Trethewey 336 and the Northern Customs 600 gallons per minute. The Hudson Bay Mining Company which is using water from the lake at the present time was not using water at that time having been closed temporarily; however, from figures available this consumption is estimated at about 100 gallons per minute. The Trethewey mine is partially closed down at present and is using roughly, one-half of the 1914 consumption so that the figures at the time of my visit would be:

Buffalo Mining Company	340	gals. per M.
Coniagas Mining Company	309	" "
Trethewey Mining Company	180	" "
Hudson Bay Mining Company	100	" "
Northern Customs Company	600	" "
Total	1529	" "
Town of Cobalt	1000	" "

so that the Mines Water Supply Company pumps approximately 200 gallons per minute more than the mines are using for about seven months in the year. This gives us 60,000,000 gallons over and above what the mines use. As this figure agrees so closely with the estimated shortage and of the natural water, we can accept the estimated deficit without further data.

If the mines were not allowed any water from Lake Sasaginaga and stopped pumping water to the lake the town would probably have to install pumps to maintain the water level—even with the water retained by the dam—as the lake level in January and February would probably drop so low that it would endanger the supply.

Reference has been made by the Town Water Commissioners to the water level in the lake falling so low, due to the operation of the mines, that it endangered the town supply. This is probably true but only twice in the last three years has the water level fallen below what would be the natural water level in the lake at that period: once in April, 1914, and once in September and early part of October, 1916. These figures were obtained from data submitted by the Town Engineer. At no time in the past three years has the water been more than six inches below the natural water level. The apparent discrepancy between the Town Water Commissioners' claims and my figures is accounted for by the fact that the Town Water Commissioners when installing their pumps made no allow-

ance for the artificial level maintained by a dam, owned, constructed and maintained by the Mines Water Supply Company which raises the water level considerably. If the dam were removed the town would not have more than three feet of water over their suction pipe for a great part of the year. This dam which is owned and maintained by the Mines Water Supply Company, retains 300,000,000 gallons of water that would otherwise be lost in the spring run-off (this figure is obtained by allowing for the fact that the dam will retain four feet of water which would otherwise be lost). This volume of water is 12,000,000 gallons in excess of the consumption of the mines during the period when the Mud Lake pumps are not in operation. This is practically the entire spring run-off and is water that would otherwise run to waste.

The total quantity of water available per annum excluding that retained by the dam and allowing for no loss by evaporation, soakage or seepage is 448,000,000 gallons from precipitation and 538,000,000 gallons from pumpage from Mud Lake, a total of 986,000,000 gallons. Allowance must of course be made for loss by evaporation. Allowing 10 per cent. for loss of water by evaporation we find that the total available water excluding that retained by the dam is 915,000,000 gallons, including that retained by the dam, 1,119,000,000 gallons. The water consumption from the lake is (1) by the mines, 690,000,000 gallons; (2) by the town, 428,000,000 gallons, or in all, 1,118,000,000 gallons.

Water normally available from all sources is from precipitation, 377,000,000, from run-off retained by the dam, 304,000,000 gallons and from pumpage from Mud Lake, 438,000,000 gallons, making a total of 1,119,000,000 gallons. Of this we must credit the Mines Supply Company with what is retained by the dam and with what they pump from Mud Lake or 742,000,000 gallons in all. Of this, the mines use 690,000,000 gallons, leaving over 50,000,000 gallons to the credit of the Mines Water Supply Company, whereas the town, if we allow them the precipitation which is normally available has 377,000,000 gallons and are using 428,000,000 gallons or in other words the town has a shortage of 50,000,000 gallons. This, I think, should be paid for by the town on the basis of the cost of pumpage from Mud Lake, the town being assessed for their share of the cost of the operation of the Mines Water Supply Company.

Another way of looking at this problem is that during the five months when the water courses in the north are frozen up Cobalt uses more water than during the summer months, due to the practice of the citizens running their taps to prevent the pipes from freezing. During this period practically no water except what is stored in the lake is naturally available for the use of the town as the precipitation is lying on the hills and in the valleys in the form of snow and ice, and Cobalt would inevitably face a serious shortage of water were it not for the operations of the Mines Water Supply Company. This being the case, I think the Cobalt Water Commission should be more inclined to come to a harmonious agreement with the Mines Water Supply Company.

Considering these facts there are three things possible: First and most reasonable would be for the Water Commissioners of the Town of Cobalt to enter into agreement with the Mines Water Supply Company and pay the cost of pumping for all water used by the town in excess of the normal available precipitation. Secondly, they could proceed under the Public Utilities Act to acquire by lease or purchase all water rights on the lake, maintain the level themselves and charge the mines for their share of the cost of pumping. Thirdly, they could purchase or secure by Private Bill entire control of the lake, force the mines to secure

their water elsewhere and be the sole users of water from Lake Sasaginaga, storing water behind their own dam and making up any shortage by pumping from Mud Lake.

If the mining companies have any rights on Lake Sasaginaga this would work unnecessary hardship on them. They would have to construct a pipe line from Mud Lake and probably install new pumps. This would mean an expenditure of between fifty and seventy-five thousand dollars.

The powers asked for in Section 6 should not, in my opinion, be vested in the Cobalt Water Commissioners as these men have no sanitary knowledge. But these powers should be given to the Cobalt Board of Health and a competent sanitary inspector appointed to police this district, under direction of Dr. McLaren, Medical Officer of Health for Cobalt. Furthermore, the limits described do not constitute the area that will be necessary for safety if water is pumped from Mud Lake to maintain the water level in Lake Sasaginaga. The catchment area of Sharp and Mud Lakes should be included in the district over which sanitary supervision is provided.

If this is done and the Town of Cobalt enters into an agreement with the Mines Water Supply Company each mine should bear their share of the cost of such supervision and I would suggest that a competent sanitary inspector be appointed to supervise this area under the direction of Dr. McLaren, Medical Officer of Health for the Town of Cobalt, and that the salary of such inspector be paid by the Mines Water Supply Company, the town bearing only such expense as may be incurred by them in using water in excess of that naturally available. This sanitary inspector should be accountable only to the Board of Health of the Town of Cobalt, although his salary be paid by the Mines Water Supply Company. This, I believe, would be the best basis for a working agreement. I am quite satisfied that the Mines Water Supply Company would enter into such an agreement if the town officials could be brought to it.

With regard to the Cobalt Water Commission, the present Commission was organized at a time when the Town of Cobalt could not finance its waterworks. The Town of Cobalt has only one representative, the Mayor, on this Commission, the other two Commissioners being the Reeve of the Township of Coleman and the Manager of the Nipissing Mining Company. As chance would have it, the Reeve of the Township of Coleman is a director of the Nipissing Mining Company, so that the Nipissing Mining Company which has no rights on Lake Sasaginaga has two representatives on the Board of Water Commissioners to the Town's one. This has led to more or less comment by various parties and it is reported that the mining property outside of the town has been supplied with town water for domestic purposes in mains which were laid at the Town's expense, while other parties inside the town limits are quite unable to secure water supply from the town system. This is not as it should be and while the water question in Cobalt is to the fore the question of the representation of the town on the Water Commission should be taken up and the Commission reorganized if necessary.

Summary.

1. There is not enough water available in the watershed of Clear Lake, Pretty Lake, Graham Lake and Lake Sasaginaga to supply the present water consumption of the Corporation of the Town of Cobalt, unless Cobalt acquire the water retained by the mines companies' dam.

2. The town has neglected to acquire under the Public Utilities Act any claim or right to water rights in this area, they being permitted to use this water because the owners either did not know or did not care to enforce their claim.

3. The mining companies which the Private Bill affects are taking water from Lake Sasaginaga under Provincial Charter.

4. The present organization of the Board of Water Commissioners for the Town of Cobalt seems unnecessary and the town should have larger representation.

5. The Board of Water Commissioners do not require the powers of a Local Board of Health. The sanitary supervision necessary should be directly under the Cobalt Board of Health and the Medical Officer of Health of Cobalt.

6. The area described for policing and sanitary control is not in my opinion, large enough to protect the watershed of Sharp Lake and Mud Lake if water from these lakes is to be pumped into Lake Sasaginaga.

Water Available:		
Natural precipitation		377,000,000 gals.
Pumpage by Mines Water Supply Company from Mud Lake		438,000,000 "
Run-off retained by Mines Water Supply Co.'s Dam		304,000,000 "
		1,119,000,000 "
Water Consumption:		
Mine supply		690,000,000 gals.
Town supply		428,000,000 "
		1,118,000,000 "
Water Owing to the Mines:		
Retained by the dam		304,000,000 gals.
By pumpage		438,000,000 "
		742,000,000 "
Mines consumption		690,000,000 "
Mines surplus		52,000,000 "
		742,000,000 "
Water Owing to Town:		
Available precipitation		377,000,000 gals.
Used by town	428,000,000 gals.	
Town's shortage	51,000,000 "	
	377,000,000 "	
Average daily shortage for town		136,000 gals.
Average available for town		1,033,000 "
Average consumption calculated		1,169,000 "
Average consumption by town meter		1,172,000 "

All of which is respectfully submitted.

A. V. De Laporte,

Acting Provincial Sanitary Engineer.

DEPOT HARBOUR WATER SUPPLY

About a year ago the water supply for Depot Harbour was reported as unnecessarily endangered by the railway company maintaining a connection with the water used at the round house and elevator. It was recommended that this connection be discontinued.

On February 7th, 1917, in company with Dr. George, District Officer of Health, I went to Depot Harbour and found that this had not been done.

We also re-inspected a septic tank at Depot Harbour which needs attention badly. The drainage area is not sufficiently under-drained and as a consequence it is water-logged. Water lies on the surface and the effluvia is noticeable at some distance. This matter should be attended to immediately, the septic tank cleaned and put in working order and the drainage area sub-drained.

A. V. DeLaporte.

HAILEYBURY WATER SUPPLY

Toronto, Sept. 6th, 1917.

An investigation was held at Haileybury on Thursday, August 16th, 1917, to consider the matter of corrosion of water pipes in that town.

Various samples of corroded pipe were shown me, one pipe which I brought with me to Toronto was three-quarters of an inch in diameter and galvanized. It had been in service only eighteen months and had corroded so badly that it was filled with pin holes and was partially blocked by the product of corrosion—iron oxide. The extent of corrosion of copper tanks and galvanized pipe shown to me revealed a serious condition of affairs.

Examination of the town water prior to filtration and after filtration showed that improper operation of the filter plant was the major cause of the trouble. The filtered water was very acid, due to carbon dioxide in solution, and unprecipitated sulphate of aluminium.

ANALYSIS OF HAILEYBURY WATER

	Water before treatment	Water after treatment
Bicarbonate alkalinity calculated as calcium carbonate	25 ppm.	5 ppm.
Free carbon dioxide calculated in terms of calcium carbonate	5 ppm.	16.5 ppm.
Mineral acids and sulphates of iron calculated in terms of calcium carbonate.....	15 ppm.	30.5 ppm.
Total acidity calculated in terms of calcium carbonate.....	13.3 ppm.	47 ppm.

It is necessary in dealing with a water of this character to add lime to successfully precipitate the coagulant. At least three grains per gallon of lime should be added prior to the addition of the alum solution.

On adding lime with the present equipment some trouble may be experienced with turbidity in the tap water. This will happen whenever the alum does not precipitate completely before filtration. To overcome this difficulty it is advisable to add the alum and lime to the water in the pump well in order to allow time for the complete precipitation of the alum before it reaches the filter.

A. V. DeLaporte.

IROQUOIS FALLS WATER SUPPLY

Toronto, January 25th, 1917.

From personal observation, under date January 25th, 1917, I can corroborate the reports of Dr. George and Mr. White regarding the sanitary condition of Iroquois Falls.

The conditions there fall under six separate headings and will be dealt with under such headings in the order of their importance.

1. Water supply.
2. Bunk houses and privies in town in regard to pollution of river.
3. Sewerage and sewage disposal.
4. The Wye.
5. Garbage.
6. Sulphite and other waste from the mill entering the river.

1. The water from Iroquois Falls is in very bad condition. The Abitibi River is not an ideal source of water for a domestic supply, and the methods of treatment are very inefficient. No approval of this system has been granted and the installation is a direct contravention of Section 89 of the *Public Health Act*.

There are five faults in the purification system, viz.:

(*a*) The intake pipe is located in such a position that the surface drainage from the Wye and from the very unsanitary camps in Iroquois Falls proper, must pass the intake pipe. This is a dangerous condition. In the reorganization of the waterworks the intake pipe should be carried to a point above any possible pollution from these sources.

(*b*) The pressure filter which has been installed is about one-third the capacity necessary. The consequence is that the water is forced through at such a rate that it does not remove any of the turbidity, let alone the bacteria. This defect should be remedied promptly by the addition of more filter units.

(*c*) The chlorine is added in the alum solution. The addition of the chlorine to the water is not at all regular, and added in this manner it tends to prevent the action of the alum. The Company are supposed to be adding chlorine in large excess. If so it should be noticeable at all times. This is not the case. A separate chlorine system should be installed, preferably of the automatic liquid chlorine type.

(*d*) The alum added before filtration is not precipitated. This is due either to the acid quality of the water or to the lack of lime in the water, or both. Experimentation is necessary to find out whether it will be necessary to add lime to the water. This should be done immediately.

(*e*) There is a separate fire system for the Town of Iroquois Falls. This is maintained at, roughly, twenty pounds pressure greater than the domestic supply. The system is connected to the domestic supply, and as the water is untreated a leaky valve might mean serious pollution in the domestic supply. In the reorganization of the waterworks this system should be removed. The Board discountenances any such auxiliary system. It is most dangerous.

2. There are a dozen bunk houses, with most unsanitary privies, located on a hill in the town between two branches of a ravine. This ravine drains into the river at a point somewhat above the intake pipe. The location of these bunk houses is a very bad one. They should be removed to a point where it would be

possible for them to have proper flush closets connecting with the sewers of the town, and where the natural surface drainage will not be to the source of the town water.

(*b*) In addition to the privies at the bunk house there are numerous privies in this section which will drain into the river above the intake pipe. These should all be removed. If conveniences are necessary at these points there are three options for the Company, viz., flush closets connected to the town sewerage system, non-flush chemical closets, and sanitary privies with water-tight bucket containers.

In addition to installing these conveniences it will be necessary for the Company, at all times, to keep them in proper condition. This means in the case of the bucket container a frequent and regular collection of excremental matter, and a satisfactory method of disposal.

After the bunk houses and all the unsanitary privies are removed it will be necessary to have the garbage and other waste matter removed, and to thoroughly clean the sites of the privies, then to disinfect the ground where the privies and garbage have been.

(*c*) The privies located in the mill drain directly into the river. They are in the most unsanitary condition and are a disgrace to the Company maintaining them. Proper sanitary conveniences should be installed and the work undertaken immediately.

3. The Company has installed a sewerage system, without authority from the Provincial Board of Health, despite the fact that they were notified by the Board's officer not to do so. They have no method of sewage disposal, although, Mr. Blanchard, townsite engineer, assured me that one was contemplated. However, before any steps are taken by Iroquois Falls or the Company in installing or extending sewers or sewerage system, or an extension or improvement of their waterworks in any way, they must submit the plans of what they have, and the plans for the future, to the Provincial Board of Health for approval.

The sewage at the present time is being emptied into the Abitibi River. This is a serious menace to the health of any Indians, trappers or prospectors who may be using the river water further down, and proper action should be taken by the Company to treat their sewage.

4. On the spur line connecting from the T. & N. O. to the mill of the Abitibi Power and Paper Company, immediately outside the town limits of Iroquois Falls, an unorganized settlement of about 500 persons has grown up. Most of these people are foreigners and ignorant of the first laws of sanitation. The privies are in an abominable condition and all the wells are seriously polluted. Iroquois Falls, for its own safety, should extend to this section sewerage and water facilities.

The close relation between the Wye and Iroquois Falls makes it impossible for an epidemic to sweep the Wye without affecting Iroquois Falls. The municipality of Iroquois Falls should be urged, for their own safety, to consider the needs of this unorganized section.

5. The garbage of Iroquois Falls is dumped fairly close to the town and a half-hearted attempt is made to burn it, but the success of the combustion is shown by the fact that on the day of my visit there were several hogs feeding upon the burnt garbage. Proper collection of the garbage in Iroquois Falls is essential and its disposal by burning in a proper incinerator is a necessity. This should be started forthwith.

6. Spent sulphide liquors, and other waste from the mill, is emptying into the river. The attention of the Company should be called to the fact that the emptying of these mill wastes into the river is an offence under the Act, and upon further notice being served, in regard to this matter, they will be obliged to discontinue the practice and treat these wastes in a manner subject to the approval of the Provincial Board of Health.

Summary.

Reorganization of the waterworks is necessary with a new intake, new filters, and new chlorine system. This should be complete by the first of April.

There is no excuse for the bunk houses and privies being in their present condition two weeks from the time of notice being served on the Company.

Construction of a sewage disposal plant and an incinerator for the garbage should be started first thing in the spring.

All of which is respectfully submitted.

A. V. DeLaporte.

NATIONAL SERVICE CAMPS FOR WOMEN

Toronto, June 27th, 1917.

Acting in accordance with instructions from the Chief Officer of Health, I visited seven of the National Service Camps for women located at Beamsville, Grimsby, Winona, Bronte, Oakville, Clarkson and Vittoria.

The camp at Beamsville is located in the residence of the late Mr. Denny on the Walker farm. It has been unoccupied for some years. A number of small repairs and improvements were being undertaken at the time of my visit. Water for both washing and drinking is obtained from either of two wells, one located in the cellar and the other to the rear of the woodshed. Both wells are comparatively shallow and in a prolonged spell of dry weather the one under the cellar goes dry. The one by the woodshed having been newly dug it is impossible to say whether it will go dry or not. Samples from both wells show the presence of bacteria of intestinal origin in 25 cc. With eighty people living on the premises the quality will deteriorate and if the summer should prove a dry one it may be necessary to seek other sources of supply.

Several patent privies of an excellent type have been installed and should prove eminently satisfactory. However, there is no means of disposing of garbage and other waste material.

The cots in the main room were arranged rather close together and at right angles to the wall. Care should be taken by those in charge in arranging the beds to allow ample air space for each occupant. A number of the girls will be living in tents. Some tents have been erected but no floors have been installed.

The camp for twenty-five girls at Grimsby is in a large house between one and two miles south of Grimsby on the Hamilton St. Catharines Road. The well is behind the house. The privy, which is of a primitive type, is about 150 feet from the well. The Hamilton and St. Catharines Road, at this point, is almost as closely built upon as a city street. The water secured from the well, therefore, irrespective of what a casual bacterial examination will show, should be regarded with suspicion.

At Winona the workers are living in an old club house. At the time of my visit there were sixty people resident on the premises. All the water was carted in a barrel from the lake. Samples taken from the barrel, as might be expected, showed intestinal organisms in 5 cc. The owner of the house should be made to install a proper pump and should provide some arrangement for the chlorination of the water.

There were eight privies, six with buckets and two without. The bathroom was equipped with a bath, wash basin and flush closet, but these could not be used owing to lack of water. The waste water is disposed of in a septic tank and tile drainage. No means of disposing of garbage had been installed, and although attempts had been made to burn the waste it has been found to be impossible without a proper incinerator. This is likely to cause a serious nuisance.

The girls were comfortably housed, one or two to a room, and everything seemed quite adequate in this respect.

At Bronte twenty-five girls are to live in a house belonging to Commodore Williams, of the Toronto Ferry Company's fleet. The water is secured from a well under the woodshed. The pit privy with five seats is located seventy-five feet from the well. The drain from the kitchen sink empties just outside the house and forms an unsightly and noisome pool. There is no way of disposing of liquid slops or garbage. A sample from the well showed intestinal organisms in 25 cc.

A summer bungalow on the lake shore has been secured at Oakville for the use of the twenty-five girls to be resident there. It is supplied with town water and has a bathroom containing a bath, wash basin and one flush closet. The condition of the Oakville water is not satisfactory, and the workers should be protected against typhoid and paratyphoid.

Mr. Pengelly at Clarkson is to employ twenty-five pickers. He plans to house them in a small frame building near the scene of their work. The nearest water is from a well between two and three hundred yards away. This well consists of four or five lengths of tile pipe sunk into the ground. There is no pump, the water having to be dipped out with a pail. This water, if properly safeguarded, should be perfectly good, but whether the supply would be equal to the demand in case of a dry summer it is impossible to say. The privy is extremely primitive and about one hundred feet from the house.

At Vittoria twenty-five pickers are housed on the Jemmett farm, which is located about one and a half miles west of the town. The water for all purposes is teamed from a farmhouse about half a mile away. Investigation of the well, where it was secured, showed it to be located under a farmhouse occupied by Mr. Bruce Lloyd. A privy, almost as primitive as that supplied for the use of the pickers, is located about seventy-five feet from the well.

NATIONAL SERVICE CAMPS FOR WOMEN.

Analysis of Drinking Water Supplies, June 21st, 1917.

Where collected from	Bacteria grown in N. Agar + 10.0 Per cubic centimeter		Colon Bacilli					Chlorine in parts per million
	At 18°-22° C 48 hours	At 37°-40° C. 24 hours	0.1 cc.	1 cc.	5 cc.	25 cc.	50 cc.	
Grimsby Tap							—	11
Denny House						+		120
Denny House (outside)						+		1,050
Mrs. Ambrose						+		12
Winona Country Club					+			10
Captain William's House						+		100
Oakville							—	15
Pengelly (broken)								
Well under Bruce Lloyd's House	too high	0					+	7
Big Creek on Farm	64	4				+		2
Spring on Farm	too high	120		+				2

Mr. Jemmett purposes housing his workers in tents, which he intends to locate on the bank of a neighbouring creek. They will be supposed to use the water from the creek for washing purposes and for drinking he is to fix up a small spring located on the side of the ravine away from the farmhouse. This should supply a safe drinking water if properly protected. On no account, however, must the spring on the hill below the farmhouse be used. Analyses showed that it contained intestinal bacteria in 1 cc.

Recommendations.

1. Each camp should be equipped with a water cooler. The cooler should be kept filled with water, disinfected according to the instructions contained in the Provincial Board of Health leaflet, entitled, "A Simple Method of Water Purification."

2. Each camp, not equipped with flush closets, should be equipped with a sufficient number of fly-tight privies. These privies should be properly equipped with water-tight buckets, which should be emptied at least once a week, and the night soil disposed of in such a manner that it will not cause a nuisance or endanger the water supply. In places where no tile drainage is available for the disposal of liquid slops, properly covered buckets should be provided and the contents disposed of in the same manner as the night soil. The privy seat and floor should be scrubbed every day with boiling water.

3. Each camp should be equipped with a simple incinerator for the disposal of garbage and other wastes.

4. Each camp should have a laundry tent where the girls can do such washing as they may find necessary.

5. Each camp should have a room or tent equipped with proper washing facilities, and a bath or tub for bathing purposes.

6. Adequate water should be supplied to each camp and in close proximity to the camp. This would necessitate the installation of pumps and pipe lines at Clarkson and Vittoria.

7. Each tent should be equipped with a wooden floor. The fly of the tent should be rolled up every day as is the custom in military camps, and from time to time the floors should be removed and the ground aired.

8. Care should be taken to prevent over-crowding in the dormitories.

Appended is a copy of the bacterial results.

All of which is respectfully submitted.

A. V. DeLaporte.

KINGSVILLE WATER SUPPLY

Toronto, May 3rd, 1917.

Kingsville is situated on the north shore of Lake Erie, about twenty miles east of the Detroit River. It has a population of 1,700. The town is built up with a good class of homes but as there are no sanitary sewers those who have installed modern conveniences have had to build septic tanks or cess pits. Part of the town is underlaid with clay and in this section difficulty was experienced with the various devices used for sewage disposal. This was overcome by privately connecting the overflow from the various tanks to a storm sewer. Some of those who could not conveniently connect to a sewer run the effluents from their tanks into a small creek, which runs through the north and west ends of the town.

A woollen mill is situated on the bank of the creek and all the dye wastes, acid liquor, and soap suds are emptied directly into it. The town's water supply, taken from Lake Erie, is affected by the storm sewer which empties into the lake to the east of the intake, and (2) the creek which empties into the lake about 800 yards west of the intake pipe. The Kingsville water supply, as our analytical data clearly shows, is very seriously and continuously polluted.

In the pumping station two high-pressure duplex pumps are installed. One is rated at 1,368,000 imperial gallons per 24 hours, and the other at 605,000 imperial gallons per 24 hours. These pumps are connected directly to a 10-inch intake, stretching 1,600 feet out in the lake, just west of the piers. The pump house is a one storey, brick building situated on the lake shore at the foot of Lansdowne Avenue. The system is direct pressure in connection with an elevated tank of 34,000 imperial gallons capacity. Sedimentation tanks were being installed at the time of my visit.

Lake Erie, at this point, is very shallow and it does not take much of a sea to make the water turbid for some distance from the shore. This turbidity was the immediate cause for the installation of the sedimentation tanks. It is also not an uncommon thing to get wigglers out of the tap, and taking these facts into consideration, along with the gross pollution of the lake, Kingsville is very much in need of a modern filter plant.

Last year the Fisheries Department established a fish hatchery at Kingsville. This is situated on the lake shore about 100 feet to the east of the creek previously mentioned. To secure water a small well was sunk on the shore. As the amount of water secured was insufficient and had considerable smell, an intake was put about 200 feet into the lake. The conditions of the Kingsville water supply held good here and a good part of the time a very turbid water was secured. Sometime after the plant had been in operation a storm on the lake completely plugged the intake with sand. To keep things going water was taken from the creek, and the dye wastes destroyed a considerable part of the hatch. While it will be possible to

remove the immediate cause of the catastrophe, it is poor practice to use a highly turbid water for this work. By putting an intake at least 2,000 feet out probably the water, in time of storm, would not be as turbid as that secured at 200 feet, but it would be impossible to get a good water all the time without going far beyond that. Therefore, a filter is a necessity if the hatchery is to be operated successfully.

As both the Town of Kingsville and the Fisheries Department will have to filter their water, the logical and economical thing to do would be for them to enter into an agreement and build a filter plant which will supply both their needs.

Kingsville also needs to install a sewer system and some simple method of treatment. Action is being taken to prevent the emptying of sewage into the lake at this point. It would be advisable, therefore, for the town to install some simple method of treatment and to build domestic sewers where necessary. This should help to clean up the creek.

The Brown and Wigle Woollen Mill, which was the immediate source of the trouble at the hatchery, should be forced to take action to prevent their waste entering the creek. Dr. R. W. Bell, Provincial Health Inspector, reported this nuisance on October 10th, 1912, in these terms: "The creek is also constantly polluted from a woollen mill located beside it in the north part of the town, the dye wastes—aniline dyes, with various acids, etc., being regularly discharged into it. The managers of the mill admitted the pollution and defiantly asserted that they would continue to utilize it for their waste dyes, etc., unless the Provincial Board of Health provided other suitable means for their disposal, and if the Board otherwise attempted to interfere they would see to the destruction of the Board."

In addition to the waste, which was entering the creek from the plant at the time of Dr. Bell's inspection, there is now a large quantity of soap solution being emptied daily by this firm into the creek. They have established a public laundry and all the dirty water and soap is disposed of in the creek.

The manager seemed quite willing to do anything within reason to stop this pollution, and I am confident that if a feasible method of disposing of the waste were presented to him he would gladly install it.

Sedimentation in a tank, built to trap the scum as well as the sediment, should render it possible to dispose of the waste in subsoil drains. The acid wastes and soap solution should be allowed to mix in the tank before discharge, as they react to clarify the liquid. As the mill is on low ground it will be necessary to pump the waste to the higher ground behind the mill; this is light sand and will simplify the drainage of the absorption area. An alternative would be, that if the town installs domestic sewers to connect to the town system, let the town treat this waste.

Conclusions.

(1) Kingsville water supply is seriously polluted. Chlorination should be resorted to without delay. Twenty pounds of bleach powder or six pounds of liquid chlorine should be added per million gallons.

(2) Filtration is necessary for both the town water supply and the water supply for the hatchery.

(3) The Fisheries Department should aid the town to install filters and secure in return their water from the town.

(4) Kingsville should install a system of sanitary sewers and some simple method of sewage treatment.

(5) Brown and Wigle should be forced to treat their waste or connect to the town sewers if the town installs a sewage treatment plant.

All of which is respectfully submitted.

A. V. DeLaporte.

KINCARDINE WATER SUPPLY

March 1st, 1917.

Kincardine has a population of 2,300 people. There are no sewers and those citizens who wish to have modern conveniences in their homes are obliged to dispose of the waste water in septic tanks or cess pits. The town is peculiarly located on a ridge which runs between the Penetangore River and Lake Huron. The soil is mostly light sand underlaid with a heavy clay. As the substratum is almost impervious to water, the surface drainage flows along the surface of the clay and comes out along the lake shore. This is particularly true in the vicinity of the pump-house.

There is no local by-law enforced specifying the style or construction of outside closets, and sanitary conditions found throughout the town are disgraceful. A number of the citizens who live along the river dispose of various household wastes by dumping on the river bank. The Penetangore River, which should be a natural beauty spot, has become, on account of these conditions, a nuisance. The sides of the hill are covered with garbage, ashes and manure, and numerous rills with a large content of domestic sewage trickle down the bank.

In addition to the domestic waste emptied into the river the waste from a small packing house and the offal from the fish packing industry are put directly into the river. The river empties into Lake Huron about three-quarters of a mile south of the pump-house.

The Chief Officer of Health wrote to the Town Clerk of Kincardine on September 19th, 1916, in regard to the pollution of the Penetangore River. A letter dated September 23rd was received from the town clerk and in this he said, "the sanitary inspector was instructed to again look into this matter," but beyond this nothing has been accomplished in this regard.

The Kincardine pump-house is located on the lake shore at the north-west corner of Durham and Saugeen Streets. It is a one storey brick structure. There are two compound duplex pumps rated respectively at 1,000.000 gallons and 1,440,000 gallons per 24 hours. The system is direct pressure in connection with a stand pipe of 125,000 imperial gallons capacity. The water is collected in two rows of 12-inch perforated tile pipe, which are laid in sand three feet below and six feet in from the low water line. These pipes drain to a tank 98 x 13 x 10 feet deep which is connected to the pump-house by 16 feet of 10-inch cast iron pipe.

Several artesian wells were sunk in 1916 and water from this source was used, temporarily, last summer. It was discontinued on account of its hardness. Previous to the installation of the collecting pipe in the sand the water was secured from Lake Huron through a 10-inch intake pipe 740 feet long. The water at this point was about 25 feet deep. The water obtained was frequently very turbid, and when the intake finally became blocked during a storm the collecting tile was laid as a substitute. The water from Lake Huron, within a reasonable distance of the pump-house, is unsatisfactory without treatment, because the new sea wall, aided by certain winds, deflects the current from the river so that the flow a great part of the time is past the pump-house, and the lake water near the pump-house is, therefore, always, more or less, seriously polluted. The present source of supply from the tile laid in the sand is of a very dubious character, for the sand is saturated with drainage and surface water from a portion of the town, and is doubtless highly charged with organic matter.

In sinking the artesian wells at seventy feet a small quantity of water of fair quality was obtained, but not sufficient to supply the needs of the town. It was,

therefore decided to go deeper and at something over a hundred feet a bountiful supply of water was obtained. This was used for a short period in the town, but it was so hard that it was found necessary to abandon this supply. As no bacterial examinations were made of the water from these wells it is impossible to give an opinion as to their use as a source of water for domestic purposes, nor is it possible, with the evidence at hand, to say whether the highly mineralized water obtained at depth can be successfully shut off.

In conclusion I would recommend that the Provincial Board of Health of Ontario should take action to ensure that the municipality of the Town of Kincardine should (1) immediately install a chlorination plant, using twenty pounds of bleaching powder or 6.5 pounds of liquid chlorine per million gallons pumped; (2) get a complete report of the water situation from some competent engineer; (3) instruct the sanitary officer to vigorously enforce the sanitary by-laws, or if there are no sanitary by-laws, schedule "B" of the Provincial Health Act, particularly in relation to the pollution of Penetangore River.

All of which is respectfully submitted.

A. V. DeLaporte.

NIAGARA-ON-THE-LAKE FILTER UNITS

Toronto, January 29th, 1917.

On December 11th, 1916, and January 15th, 1917, I conducted some tests of the filter units at Niagara-on-the-Lake. The results obtained were not as satisfactory as I had anticipated, but this is probably due to the fact that the pump well and the intake pipe are so small that the alum added to the pump well has no time to coagulate before filtration. The small volume of water available in the pump well is serious from another standpoint. There is not enough water to keep one pump working at capacity and it is the practice to throttle the pump to meet this condition. What would happen in case of a fire?

The filters themselves are of standard design and although the operation was not as efficient as I expected, they should, with proper coagulation of the alum, fulfil every expectation. The following are the bacterial results obtained:

Bacteria per cc.	Raw	Filter "A"	Filter "B"	Filter "C"	Average Bacterial Removal
37°C.	500	140	36	56	90%
18°—20°C.	900	130	25	22	97%
B. Coli in 100cc.	3,000	54	33	50	98%

(Phelp's Method).

Note.—The bacterial results given are an average for 15 samples, except in the case of Filter "A," when the averages for 25 samples taken two minutes apart, after washing the filter before the efficiency of the filter has been regained. This accounts for the high average of Filter "A."

The figures given are for the average run of the filters. At times the efficiency will be greater and at other times much less, showing the necessity of maintaining a sufficient dose of chlorine for this water. This should be added as constantly as though no filters had been installed. If the town wishes to reduce the amount

of chlorine necessary, they will have to purchase apparatus for the addition of the chlorine solution to the town mains, either by pumping the solution or forcing in chlorine gas. If the chlorine were added subsequent to filtration, the amount necessary to insure the safety of this water supply would possibly be one-third of that now used, but, if they continue the practice of adding the chlorine solution before filtration, they must maintain the present amount of chlorine used.

One other feature of the installation which appeared to me to be very unsatisfactory was the practice of emptying the wash water into an open field adjacent to the pump-house, instead of carrying it back to the river or into the town sewers. At present it pools and forms an unsightly pond, which in summer will give rise to objectionable odours. The town should take immediate steps to install proper intake and pump well, and make arrangements to carry the waste water from the filters either into the town sewers or to some point of the river where it will not interfere with their own intake pipe.

The municipality of Niagara-on-the-Lake are very fortunate in having secured the services of the engineer who is at present in charge of the water supply. He seems thoroughly efficient, willing, and realizes the great responsibility that rests on his shoulders. When any steps are being considered to remedy the defects which are pointed out, Mr. Brown's opinion should be taken into consideration.

Summary.

1. The pump well should be immediately enlarged and a sufficient flow of water ensured to meet the needs of the pumps at all times.
2. The wash water from the filters should be either carried into the town sewers or emptied into the river at a point where it will not interfere with the municipal supply.
3. It would be very desirable for the municipality to install a Venturi meter and apparatus for injecting chlorine or chlorine solution into the water mains following filtration, instead of adding solution before filtration as is at present the practice.

All of which is respectfully submitted.

A. V. DeLaporte.

OAKVILLE

Septic Tanks on Dean's Property.

On January 13th, and in company with Mr. Dean, I went over the septic tanks on Mr. Dean's property and on February 13th I again visited Oakville and inspected these tanks with Dr. Stead, the local Medical Officer of Health, and Mr. McLaren, the Sanitary Inspector.

Complaints were received in June, 1916, regarding an effluvia from the overflow from these tanks. On July 19th a letter was sent to Dr. Stead pointing out how to proceed towards the removal of this nuisance. On October 30th and November 1st, 1916, respectively, Mr. Dallyn, the Provincial Sanitary Engineer, wrote to the Health Officer at Oakville, urging action in regard to this matter. Notice had been served by Dr. Stead sometime in December giving thirty days time to abate this nuisance, but to date nothing has been done.

There are on Mr. Dean's property two septic tanks which drain directly into a creek which is carried in a concrete drain, partially under and partially through, the reservoir from which the town water is pumped. This drain ends on the shore at a point directly in line with the Oakville intake pipe.

In view of the menace to the water supply these septic tanks should be immediately ordered closed, and connection be had with the town sewers which are available at this point.

All of which is respectfully submitted.

A. V. DeLaporte.

LISTOWEL WATER SUPPLY

Toronto, November 14th, 1917.

I beg to advise you that the request of the Town of Listowel for your engineer to look over the waterworks, more especially the pollution of the wells, has been met, a visit being made on November 3rd.

The chief difficulty with reference to remedying the surface drainage lies in the fact that the wells have been bricked up for the last forty feet and the bricks have been set, practically, without mortar. In some of the wells mortar necessary for bonding has been introduced, but generally speaking, the bricks are in no sense laid with full mortar joints.

Seepage from the surface of the ground and from a quicksand strata layer, some twelve feet lower, reaches the wells without difficulty. To remove the menace of cess pools the town is asking the approval of the Board for the construction of a septic tank to receive the drainage of several premises now using cess pits. It is proposed to discharge the effluent of the tank directly into the river.

I would recommend that permission be given to construct this tank, with the proviso that such further chambers be added as will protect against any pollution of the creek. The construction of the additional chambers to be determined after the original tank has been put in operation. The pit privies, now in the area affecting the wells, should be immediately provided with water-tight receptacles and cleaned as required. I think a ten day removal would be satisfactory.

Surface water affecting the reservoirs may be diverted by the construction of some field drains through the area in which the wells are located, the field drains to be connected up and made to discharge directly to the creek.

All of which is respectfully submitted.

F. A. Dallyn.

LONDON SANITARIUM WATER SUPPLY

Acting on instructions from the Chief Officer of Health I visited London on Friday, October 26th, 1917, and went over the proposed water supply of the London Sanitarium with Sir Adam Beck. I made a sanitary survey of the springs with the following results: The springs which are supposed to be fed from a pond some half mile away come out at the foot of a gravel bank. In a direct line between the spring and the pond and about 100 yards from the springs are the new buildings of the London Sanitarium.

The Sanitarium is equipped with modern conveniences and water service. The sewage is carried in tile pipes, with concreted joints, to a septic tank on the gravel bank about 100 yards from the head spring, but below it. The water from the collecting head spring, unfortunately, is carried in a tile pipe, with concreted joints, *under the effluent pipe from the septic tank*, to the pump well.

SPRING WATER, BYRON SANITARIUM

Where collected from	Bacteria grown in N. Agar 10.0 per cubic centimeter		Colon bacilli					*Colonoid bacilli 20 cc.	Chlorine in parts per million
	At 18°-22°C. 48 hours	At 37°-40°C. 24 hours	0.1 cc.	1 cc.	5 cc.	10 cc.	20 cc.		
Well No. 1, Byron Sanitarium	.....	1	....	....	....	....	....	.....	5.0
" 2, " "	.....	0	....	....	....	....	?	?	4.5
" 3, " "	.....	1	....	....	....	....	....	.....	4.0

*Colonoid bacilli are such as belong to the colon group.

Altogether apart from what bacteriological evidence we have it would be very difficult to safeguard the springs once the new buildings are occupied. The strict regulations to prevent the soiling of the ground would prove irksome to the patients, and the enforcement of them, irksome to the hospital authorities. Therefore, while I have no doubt that at the time of my visit any pollution which may have been in the springs was of purely animal origin, I could not recommend these springs as a source of water supply with the buildings so close to them and in the drainage area.

Appended is a bacteriological report of the sample I took.

All of which is respectfully submitted.

A. V. DELAPORTE.

PARRY SOUND CHLORINATION SYSTEM

On Tuesday, February 5th, 1917, in company with Dr. George, District Officer of Health, I went over the chlorination system of the water supply of the Town of Parry Sound. The men in charge had misunderstood directions to a certain extent and instead of using the orifice full bore, had inserted a copper wire, cutting down the flow considerably.

The area of the orifice left is so small that it must, from time to time, be partially plugged with the small scales of calcium salts which are always present in a solution of bleaching powder. The copper wire might be removed and the amount of solution fed increased correspondingly.

Another improvement required is the insertion of a valve between the pipe carrying the orifice and the concrete box in which the head on the orifice is regulated. This would replace the stick with which they plug the orifice at the present time.

Directions to this effect were given to the pump engineer.

All of which is respectfully submitted.

A. V. DELAPORTE.

PORT DOVER SPRINGS

Acting on instructions from the Chief Officer of Health I made a survey of the springs, at Port Dover, which are suggested for use as a source of water supply for the town.

The springs are located about three miles north-west of Port Dover and are outcrops of ground water, augmented by drainage from several hundred acres of farm lands. Bacterial examinations of the water from the springs show the presence of bacteria of intestinal origin at practically every spring. This may be attributed to the fact that the arable land in the immediate vicinity is fertilized with manure and the ground immediately around the spring is tramped by cattle.

The intention of the town authorities is to secure two or three of the springs and enough of the land surrounding the springs to insure their safety. This may be easily done. The land so secured should include all the adjacent area draining to the springs in order that there will be no contamination of the springs by such surface water. The site so secured should be adequately fenced and trespassing for any reason whatsoever prohibited. Suitable precautions must be taken to prevent the creek back-flowing in times of high water. It would be necessary to secure at least from three to five acres, depending on the number of springs acquired.

And it would be better to look to the future and purchase, if possible, the entire valley from its head right to the springs. This area is approximately 150 to 200 acres.

All of which is respectfully submitted.

A. V. DeLaporte.

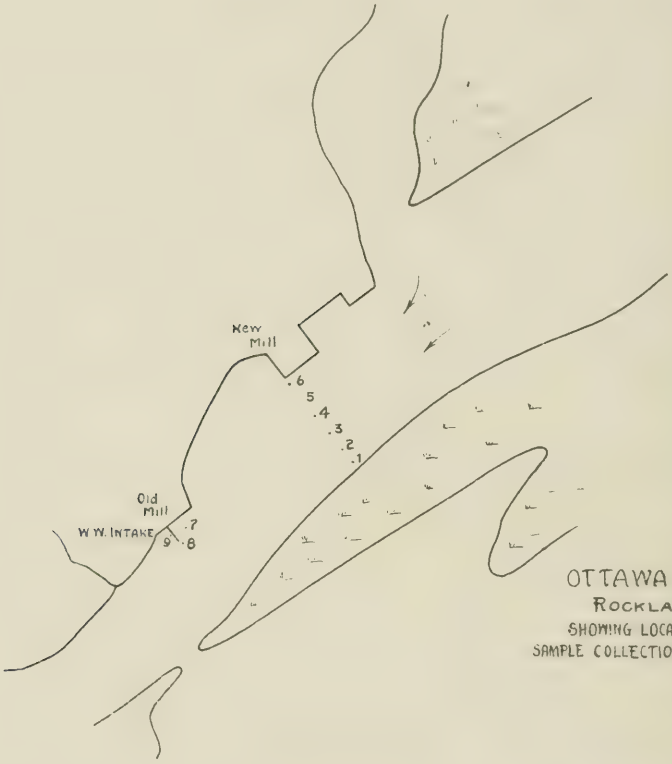
ROCKLAND WATER SUPPLY

Acting on instructions from the Chief Officer of Health I visited Rockland on May 25th, 1917, and took a number of samples from the Ottawa River, both above the Rockland intake pipe and in its immediate vicinity.

Rockland is situated on the Ottawa River about thirty miles below the City of Ottawa. It has a population of 3,270 people. The waterworks are owned by W. C. Edwards and Company, Limited. The water is secured from the Ottawa River through two intake pipes, one of which, an 8-inch pipe, ends at the face of the dock and just below low water level, and the other, which consists of 200 feet of 10-inch and 100 feet of 8-inch pipe, extends about 10 feet beyond the face of the dock and is about 2 feet below the low water level.

There are two duplex horizontal double acting pumps, which have a respective capacity of 900,000 and 700,000 imperial gallons per twenty-four hours. The system is direct pressure in connection with several elevated tanks of the following dimensions: A stone tank 20 feet x 20 feet x 14 feet, capacity 35,000 gallons and three steel tanks with a total capacity of 5,940 imperial gallons. The water is supposed to be for fire protection only, but about two-thirds of the town is supplied with this water and it is used for domestic purposes. The average daily consumption is about 70,000 imperial gallons.

Samples were taken at the points indicated in the accompanying sketch, two samples being taken at each point, one at the surface and one at a depth of twenty feet, except where the river was less than twenty feet deep, three feet above the bottom. Sample point No. 9 was immediately at the end of the larger intake pipe and the deep sample at that point was taken as close as possible to end of the intake pipe.



OTTAWA RIVER
ROCKLAND
SHOWING LOCATION OF
SAMPLE COLLECTION POINTS

Bacterial examination of these samples show a general sewage pollution. The sample points were uniformly distributed across the river. This shows clearly that the river is polluted throughout its width. Conditions about the mouth of the intake are such as to increase the already serious pollution of the water. As mentioned before, the intakes are at the side of the dock. Barges are generally moored here. At the time of my visit a barge belonging to the Ottawa Transportation Company was moored to the dock while loading wooden slabs. There were no conveniences provided on the boat, a bucket was used as a substitute; after use this was emptied over the side of the boat, in the immediate vicinity of the intake pipe. Resident on the barge are seven or eight people, including the captain's family.

The water supplied to Rockland, as shown by the analytical data, is dangerously polluted and chlorination should be immediately resorted to while other means of safety are being devised.

ANALYSIS, THE EXISTING ROCKLAND WATER SUPPLY.

Date	Where collected from	Bacterial Count K. Agar + 10.0		Colon Bacilli					Chlorine in parts per million
		At 18°-22° C. 48 hours	At 37°-40° C. 24 hours	0.1 cc.	1 cc.	5 cc.	25 cc.	50 cc.	
Dec. 22..	Tap	.....	.....	.....	—	—	—	—	2
Dec. 29..	Mrs. Clement's Tap	200	12	.....	+	—	—	—	3
Jan. 2..	Tap	60	20	.....	—	—	—	—	3
Jan. 4..	Tap No. 5	42	10	.....	....	....	—	—	3
Jan. 5..	Tap	160	34	.....	—	—	—	—	3
Jan. 12..	Tap	130	15	.....	—	+	—	—	2
Jan. 30..	Tap	.....	.....	.....	—	....	.....	.....	2

ANALYSIS OF OTTAWA RIVER AND OTHER SOURCES OF WATER SUPPLY FOR ROCKLAND.

Source and location of sample		Bacterial Count K. Agar + 10.0		Colon Bacilli					Chlorine in parts per million
		At 18°-22° C. 48 hours	At 37°-40° C. 24 hours	0.1 cc.	1 cc.	5 cc.	25 cc.	50 cc.	
Locat'n 1	Surface, Ottawa River	30	9	.....	....	....	+	—	....
" 1	Bottom, 7 feet below surface	100	Sp.	.....	....	....	+	+	....
" 2	Surface, Ottawa River	69	13	.....	....	....	+	+	....
" 2	Bottom, 20 feet below surface	80	18	.....	....	—	+	+	....
" 3	Surface, Ottawa River	80	7	.....	....	+	+	+	....
" 3	Bottom, 20 feet below surface	90	5	.....	....	....	+	+	....
" 4	Surface, Ottawa River	34	7	.....	....	....	+	+	....
" 4	Bottom, 20 feet below surface	190	9	.....	....	....	+	—	....
" 5	Surface, Ottawa River	44	21	.....	....	....	+	+	....
" 5	Bottom, 20 feet below surface	120	16	.....	....	+	+	+	....
" 6	Surface, Ottawa River	23	6	.....	....	+	+	+	....
" 6	Bottom, 20 feet below surface	375	15	.....	....	....	+	+	....
" 7	Bottom, near intake	220	Sp.	.....	....	+	+	+	....
" 8	Surface "	300	32	.....	....	+	+	+	....
" 9	Bottom " "	160	31	.....	....	+	+	+	....
" 10	Commercial Industrial Co.,	110	20	.....	....	+	+	+	....
" 11	Turner's Spring	112	15	.....	....	....	+	+	....
" 12	Town Tap	120	7	.....	....	+	+	+	....

Dr. Powers, M.O.H. of Rockland, suggested as an alternative to filtering the Ottawa River water, the possibility of using several springs belonging to the Commercial Industrial Company, as a source of supply for the town. A survey of the surrounding area showed that the springs came from fissured limestone rock and were probably ground water draining a large farm area. Within 200 yards of the main spring a small creek which is acting as a farm drain empties into a "sink hole" in the rock and is no doubt the chief source of the main spring.

CONCLUSIONS.

(1) Chlorination apparatus should be immediately installed and 20 pounds of bleaching powder or 6.6 pounds of liquid chlorine should be added to every million gallons of water pumped.

(2) If in the reorganization of the waterworks that is necessary, it is decided to use the Ottawa River as a source of supply, new intakes extending to deep water are necessary.

(3) If Ottawa River is to be used as a source of supply pressure filters should be installed.

(4) The springs controlled by the Commercial Industrial Company are not sufficiently pure to be supplied to the town without treatment.

(5) Only about two-thirds of the town can secure water at the present time. The water mains should be extended to supply water to the lower or south-easterly end of the town—East Rockland.

Appended is a copy of the bacterial findings and a sketch map showing location of the sample points.

All of which is respectfully submitted.

A. V. DeLaporte.

RE STURGEON FALLS PULP WASTE

Toronto, November 26th, 1917.

Dr. J. W. S. McCullough, Chief Officer of Health, Toronto, Ont.

Sir,—Mr. DeLaporte, the Chemist in charge of the Experimental Station, was in Sturgeon Falls on December 2nd, 1915, in reference to the pollution of the river. The situation with reference to the town water supply was extremely precarious. In making his report Mr. DeLaporte dealt with the town water supply rather than with the question of stream pollution by the pulp mill. In his verbal report to me Mr. DeLaporte said that the waste from the pulp mill was being discharged, without treatment, into the river and that it did occasion, at times, serious nuisance.

A sample of the wash liquors was sent to the Experimental Station for analyses and we determined there was 2,000 parts per million of pulp in the wash liquor and its acid content 793 parts per million as H_2SO_4. This represents a pollution which could be considerably modified by the installation of save-alls for pulp, or if the several wet machines were operated using waste water and some sort of coarse pulp made of the fibre which is now discharged into the river.

I believe it is a situation which could be materially improved if the authorities went to the Spanish River Pulp Company and advised them that unless steps were taken they would be proceeded against in the courts.

All of which is respectfully submitted.

F. A. Dallyn,

Provincial Sanitary Engineer.

Laboratory Reports for the Year 1917

Laboratories of the Provincial Board of Health, Toronto

Branch Laboratories at Kingston

Branch Laboratories at London (Institute of Public Health)

Main Laboratories, Chemical and Bacteriological, 5 Queen's Park. The Provincial Assay Office is also in this building.

REPORT OF THE LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH, TORONTO

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN.—I have the honour to submit herewith a tabulated statement of the work performed in these laboratories during the year 1917. The number of specimens examined shows a total of 11,755, as follows:

Diphtheria (Swabs)			3,964
Release from Quarantine		1,440	
Positive	412		
Negative	1,028		
Diagnosis		2,524	
Positive	465		
Negative	2,059		
Tuberculosis (Sputum			2,159
Positive	385		
Negative	1,774		
Typhoid (Blood)			835
Positive	214		
Negative	621		
Syphilis			688
Colloidal Gold Reaction		5	
Wassermann Reaction		569	
Very strongly positive	148		
Strongly positive	7		
Postiive	22		
Negative	392		
Treponema Pallida		3	
Positive	...		
Negative	3		
Gonorrhœa		111	
Positive	44		
Negative	67		
Rabies (Brains of Animals)			79
Negri bodies present	34		
Negri bodies absent	45		
Milk			54
Water			2,757
Bacteriological	2,732		
Chemical	25		
Liquor (for License Department)			895
Miscellaneous Specimens (including Coal for Public Institutions)			327
			11,758

Comparison with the reports of previous years shows that this has been the greatest year in the history of the Laboratories.

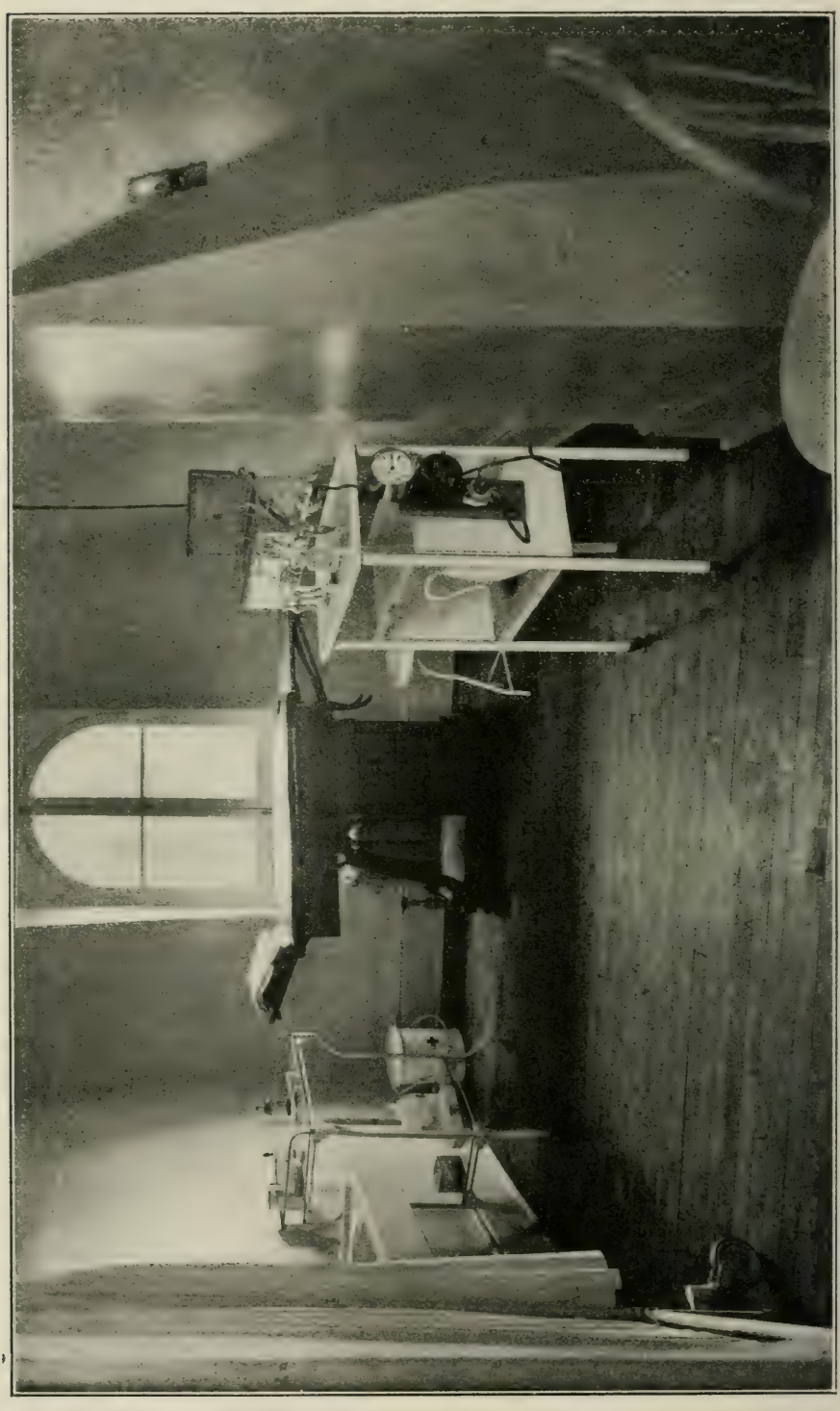
The following is the statement of the amount of Typhoid-Paratyphoid Vaccine supplied to the army, gratis:

Canadian Militia	397,680 doses
Newfoundland	5,250 "

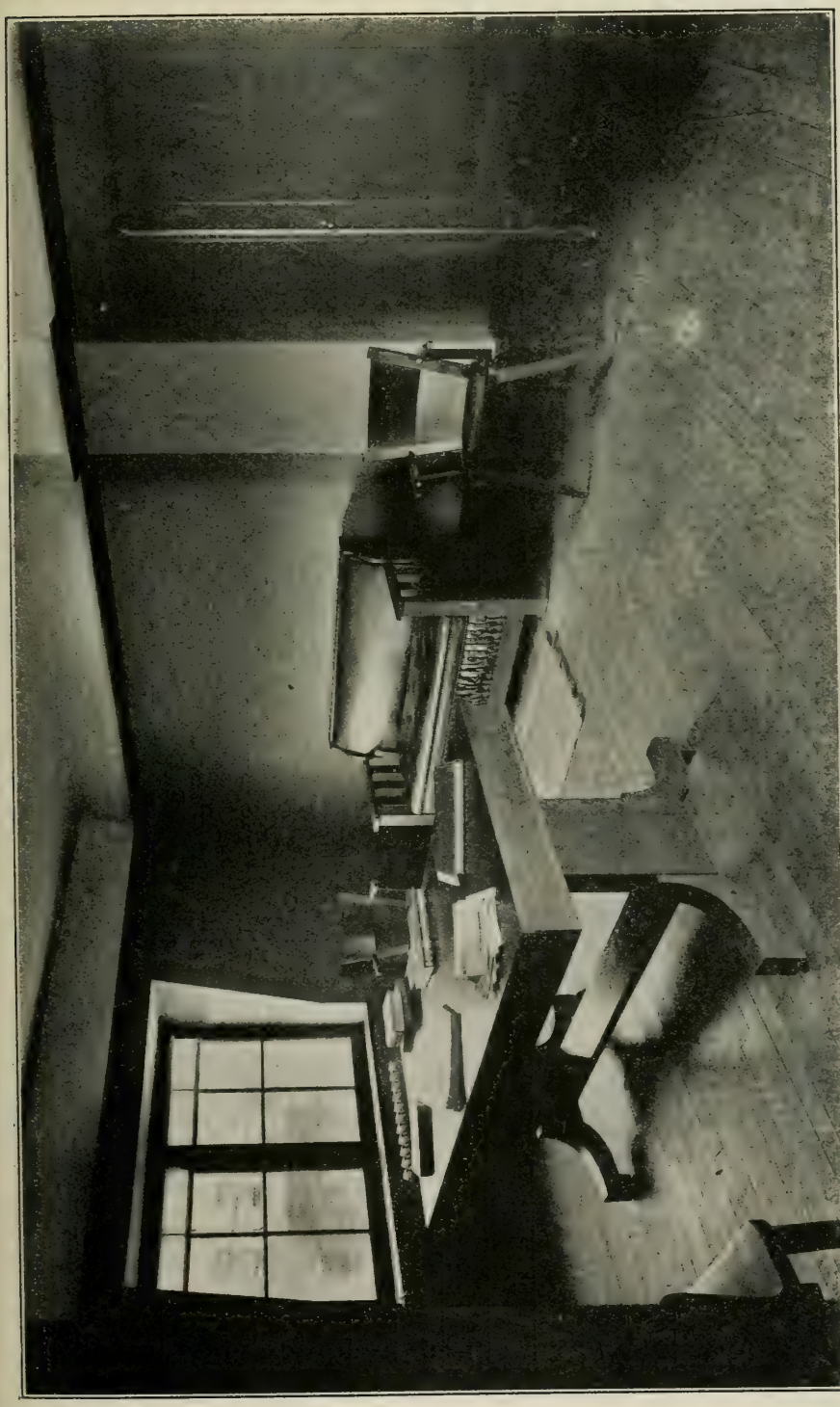
The expansion to include new work in connection with the supply of silver nitrate for the prevention of Ophthalmia Neonatorium, the vaccine for the prevention and cure of Pertussis, and the diagnosis of venereal diseases has made the year a heavy one for the Laboratory staff. We have all done our best to carry on in the absence of Dr. Amyot who is still overseas.

H. M. LANCASTER,
Acting Director of Laboratories.

Laboratories, March 19th, 1918.



Operating Room—Pasteur Treatment.



Patient's Waiting Room—Pasteur Treatment.

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH

Municipalities	Diphtheritic Swabs.				Tubercu-lous Sputa		Typhoid Bloods.		Syphilis					
	Release		Diagnosis							Wassermann Reaction			Treponema Pallida.	
	—	—	—	—	—	—	—	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	—	—	—
Algoma—														
Blind River						1								
Bruce Mines						7	1	5		1				
Cream Hill Mine				1		2	1	3						
Creighton Mine		1	4	15		2		2		6		1	8	
Cutler														
Espanola								1						
Hornepayne														
John Island						2								
Foleyet														
Larchwood														
Levack								1						
Sault Ste Marie	2	6	11	9	7	33								
Spragge				1		1								
Steelton						1								
Thessalon			1											
Webbwood			2	2		1								
Worthington														
Brant—														
Brantford					6	30		2					2	
Burford						1	1	3						
New Durham							1	1						
Oakland					1									
Paris	1	1	3			5								
St. George								2						
Bruce—														
Cargill	3	8	3	6										
Chesley		1		3		3	1	5						
Elmwood				1		8	4	6						
Hepworth						2								
Kincardine						6								
Lucknow					1	3								
Paisley			1			4	1							
Port Elgin		1		1	1	26	1	1						
Ripley		2	1	1	2	5								
Tara						4		2						
Teeswater														
Tiverton				2	1			1						
Walkerton					1	1								
Carleton—														
Ashton					2	4								
Carp	5	22	1	9		3								
Galetta														
Kars			2	1										
Kinburn				1		3								
Manotick				1	1	7		1						
Metcalfe	1		2	4		1		1						
North Gower	2	2	2	1	1	6		2						
Ottawa			1					2		6			6	
Westboro														
Vernon						1								
Dufferin—														
Glen Cross														
Grand Valley						5		1						
Orangeville				1	2	6		3						
Rosemont														
Shelburne			3	4				1						

OF ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED

Gonorrhœa		Rabies Diagnosis				Milk										Waters				Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac.		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	—	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	14
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	39
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	9	....	....	10
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	5	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	6	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	13	21	....	102
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	11	....	....	11
3	1	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	6	84	23	....	157
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	....	8
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	1	....	....	3	....	14
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	....	5
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	16
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	66	....	....	66
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	1	....	....	....	1
..	..	cat	....	2	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	12
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	1	1
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	9

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis						
	Release		Diagnosis						Wassermann Reaction					Treponema Pallida.	
		—		—		—		—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive		—		—
Dundas—															
Chesterville						1									
Morrisburg		1	1	2	1	18	2	4							
Durham—															
Bethany						1		3							
Bowmanville	12	24	7	22	1	10	2	5		2					
Blackstock						2		1							
Enniskillen		1	1	3		6		2							
Fraserville															
Garden Hill		1		1											
Millbrook	1	2	3	2		10	2	3							
Newcastle						1									
Newtonville															
Orono				8	4	5	1								
Pontypool				2		1		1							
Port Hope	7	11	10	14	5	16	2	3		1			1		
Elgin—															
Aylmer															
Dutton															
Port Burwell						2									
Rodney					3	7									
Shedden						1		1							
Staffordville						1									
St. Thomas															
West Lorne															
Essex—															
Amherstburg					1	1	1								
Belle River						3									
Comber					1	5									
Essex				1	2	15									
Ford City	7	9	8	4	1	3		1							
Harrow						1									
Kingsville	5	5	3	6		9									
Leamington							1	2							
McGregor						1									
Ojibway															
Pelee Island															
Ruscomb															
Sandwich		1	2	7			3	3							
Tecumseh	9	32	16	202		4									
Walkerville	6	8	1	16	2	4		1					2		
Windsor	73	176	23	295	11	46	3	14		9			10		
Frontenac—															
Kingston															
Sharbot Lake						1									
Verona						1									
Glengarry—															
Alexandria		1	1	3	5	4	2	1							
Apple Hill			1	4			1								
Dalhousie Mills					3	8	1	3							
Dunvegan					1	4		2							
Martintown				2				1							
Maxville					2	2	1	1							
Williamstown															

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters				Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	30
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
1	1	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	89
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	14
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	2	5
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	3	....	3	30
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	2
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	6	....	1	25
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..	2	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	72
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	1
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
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..	1	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
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..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	12	....	....	40
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1	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	21	1	683
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REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Treponema Pallida.	
	+	—		—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—	+	—
Grenville—															
Cardinal	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Kemptville	....	....	....	1	3	9	....	2	....	....	....	....	....	....	....
Merrickville	....	....	....	....	1	....	....	2	....	....	....	....	....	....	....
Prescott	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Spencerville	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Grey—															
Annan	....	2	....	3	....	2	....	....	....	....	....	....	....	....	....
Ayton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bognor	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Chatsworth	4	5	1	3	1	1	....	....	....	....	....	....	....	....	....
Clarksburg	....	1	....	1	....	1	1	....	....	....	....	....	....	....	....
Desboro	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Dornoch	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....
Dromore	....	....	....	....	1	3	....	....	....	....	....	....	....	....	....
Dundalk	....	....	....	....	2	4	....	1	....	....	....	....	....	....	....
Durham	....	....	1	1	3	4	....	2	....	....	....	....	....	....	....
Flesherton	....	....	2	3	2	7	....	....	....	....	....	....	....	....	....
Hanover	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Heathcote	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Holstein	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Markdale	....	....	....	1	2	8	....	....	....	....	....	....	....	....	....
Meaford	....	....	....	3	....	7	....	3	....	....	....	....	....	....	....
Neustadt	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Owen Sound	....	1	....	6	3	13	1	5	....	2	....	....	....	....	2
Priceville	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....
Rocklyn	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
Thornbury	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Haldimand—															
Canfield	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Cayuga	....	....	....	....	....	5	....	1	....	....	....	....	....	....	....
Dunnville	....	....	....	10	....	11	3	12	....	....	....	....	....	....	....
Fisherville	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hagersville	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Jarvis	....	....	....	....	3	3	....	1	....	....	....	....	....	....	....
Selkirk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Haliburton—															
Minden	....	3	....	1	2	....	....	....	....	....	....	....	....	....	....
Halton—															
Acton	....	2	1	1	....	....	....	....	....	....	....	....	....	....	....
Bronte	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Burlington	4	4	2	3	....	2	....	....	....	....	....	....	....	....	....
Freeman	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Georgetown	....	....	....	3	....	7	....	1	....	....	....	....	....	....	....
Milton	....	....	1	1	....	5	....	....	....	1	....	....	....	....	....
Oakville	....	2	1	6	1	2	1	8	....	1	....	1	6	....	....
Palermo	....	1	1	1	....	....	....	....	....	....	....	....	....	....	....
Hastings—															
Bancroft	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Belleville	....	....	....	....	7	11	5	11	....	....	....	....	....	....	....
Deseronto	....	....	....	1	2	10	....	2	....	....	....	....	....	....	....
Eldorado	....	....	....	2	....	2	2	3	....	....	....	....	....	....	....
Foxboro	....	....	....	1	....	6	1	2	....	....	....	....	....	....	....
Frankford	....	....	....	....	....	....	2	3	....	....	....	....	....	....	....
Madoc	....	....	....	1	1	9	....	2	....	....	....	....	....	....	....
Marmora	3	1	1	3	1	4	....	2	....	....	....	....	....	....	....

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters				Total for Year
						Food Content		Preservatives		Bacteriological										
			Negri Bodies							Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	13
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	1	2
8	8	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	42	2	....	93
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	6
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	9	....	....	46
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	4
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	10	1	....	15
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	1
..	..	2d'gs	1	1	....	....	....	..	..	....	....	....	....	....	....	....	....	60	....	....	77
..	..	1dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	1	9
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	8	....	16	....	7	61
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	....	4
2	2	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	36	....	....	74
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	15
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REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis							
	Release		Diagnosis						Wassermann Reaction						Treponema Pallida.	
	+	—	+	—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—		+	—
Hastings.—Continued																
Springbrook				2			1	1								
Trenton				1	1	4	1	2					5			
Tweed						1										
Huron—																
Auburn						2										
Blyth						1										
Brussels				1		3	2	1								
Clinton																
Crediton					1	2		2								
Ethel						2	1	5								
Exeter					2	3										
Fordwich								2								
Goderich						1	2	1								
Gorrie																
Hensall						1										
Kintail					1											
Seaforth	2		1	1	1	3	1	2								
Wingham	3	4	11	11		5	1	3								
Kenora—																
Keewatin						4										
Kenora																
Sioux Lookout																
Kent—																
Blenheim						2										
Bothwell						1										
Chatham			2	4	8	31		4								
Dresden					1	9										
Merlin			1	4		3		1					2			
Ridgetown						2										
Thamesville			2	1	1	4										
Tilbury				2	1	4										
Wallaceburg					2	2										
Lambton—																
Alvinston					1											
Florence				1	2	1										
Forest	12	17	10	3												
Petrolia					1	4										
Port Lambton						1										
Sarnia			1	1	2	3		1								
Sombra				1		2	1	2								
Thedford				1		2										
Watford																
Lanark—																
Almonte	1	1	1	4	3	4										
Carleton Place						2		1								
Lanark				3		6		3								
Middleville						3										
Pakenham		2				3										
Perth					3	10	1	1								
Smith's Falls																
Leeds—																
Brockville		2	2	3		9	1	1								
Mallorytown				6		1		2								
Lennox & Addington—																
Napanee																

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological											
										Tubercle Bac		Pus Cells									
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
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..	..	dog	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	....	4
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	1	....	....	....	....	43
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	5	....	....	10
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	32	1	1	42
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	3
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	4	....	....	18
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	10	6	....	19
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	12
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	4	22
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	2	....	4

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs. Release +	Diphtheritic Swabs. Release −	Diphtheritic Swabs. Diagnosis +	Diphtheritic Swabs. Diagnosis −	Tuberculous Sputa +	Tuberculous Sputa −	Typhoid Bloods. +	Typhoid Bloods. −	Syphilis Colloidal Gold Reaction	Syphilis Wassermann Reaction Very Strongly Positive	Syphilis Wassermann Reaction Strongly Positive	Syphilis Wassermann Reaction +	Syphilis Wassermann Reaction −	Syphilis Treponema Pallida. +	Syphilis Treponema Pallida. −
Lincoln—															
Beamsville	1	2	....	4	1	6	1	1	....	....	....	....	....	....	....
Grimsby	....	....	....	....	....	11	....	7	....	....	....	....	....	....	....
Jordan	....	....	....	....	3	3	2	2	....	....	....	....	....	....	....
Merritton	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Niagara-on-the-Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Port Dalhousie	....	....	....	....	2	2	....	....	....	....	....	....	....	....	....
Smithville	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....
St. Catharines	3	7	8	9	19	60	1	6	....	4	....	....	5	....	....
St. David's	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wellandport	....	....	....	....	....	5	....	4	....	....	....	....	....	....	....
Manitoulin—															
Gore Bay	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Little Current	....	....	....	2	1	4	....	....	....	....	....	....	....	....	....
Middlesex—															
Ailsa Craig	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Lobo	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
London	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Parkhill	....	....	2	3	....	....	....	....	....	....	....	....	....	....	....
Strathroy	....	....	....	....	3	6	....	....	....	....	....	....	....	....	....
Muskoka—															
Bala	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Bracebridge	....	1	1	3	....	6	....	....	....	....	....	....	....	....	....
Gravenhurst	....	....	....	....	....	1	1	....	....	1	....	....	....	....	....
Huntsville	....	....	1	3	....	1	....	5	....	....	....	....	....	....	....
Port Carling	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Severn Bridge	2	4	....	2	2	2	2	1	....	....	....	....	....	....	....
Utterson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Nipissing—															
Algonquin Park	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Bonfield	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Boston Creek	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Burwash	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Mattawa	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
North Bay	5	8	10	8	6	11	1	4	....	1	....	....	5	....	....
Sellwood	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Sturgeon Falls	....	....	....	1	....	2	....	....	....	....	....	....	....	....	....
Whitney	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....
Norfolk—															
Delhi	....	....	....	1	2	18	1	5	....	....	....	....	1	....	....
Langton	....	....	....	....	....	2	....	2	....	....	....	....	....	....	....
Port Dover	....	....	....	1	....	4	....	3	....	....	....	....	....	....	....
Port Rowan	....	....	....	2	....	7	....	....	....	....	....	....	....	....	....
Simcoe	....	....	....	6	5	31	....	1	....	....	....	....	....	....	....
Vittoria	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Waterford	....	....	....	1	1	11	1	2	....	....	....	....	....	....	....
Northumberland—															
Brighton	1	3	2	1	1	2	1	....	....	....	....	....	....	....	....
Campbellford	....	....	....	....	2	1	....	....	....	....	....	....	....	....	....
Castleton	....	....	....	2	....	1	....	1	....	....	....	....	....	....	....
Cobourg	....	....	....	2	4	21	1	7	....	....	....	....	....	....	....
Colborne	....	....	....	1	....	1	1	3	....	....	....	....	....	....	....
Grafton	2	1	1	1	1	....	....	....	....	....	....	....	....	....	....
Warkworth	....	....	....	....	....	6	....	2	....	....	....	....	....	....	....
Wooler	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters				
			Negri Bodies			Food Content		Preserv-atives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	7	....	....	23
..	..	2d'gs	1	1	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	....	22
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	1	1	7	....	....	19
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	7	6	....	14
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	2
..	1	cat	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	27	28	....	179
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	1
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	1	22	....	....	32
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	....	3
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	71	10	1	141
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
1	4	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	8
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2	2	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	32
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	2	6	....	....	16
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	9
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	4	....	3	12	....	62
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	17
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REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis							
	Release		Diagnosis							Wassermann Reaction					Treponema Pallida.	
	+	—	+	—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—		+	—
Ontario—																
Beaverton			1			2	2	7								
Brougham			1													
Cannington		1		2		5		4								
Claremont						2		2								
Goodwood							1									
Greenwood																
Myrtle																
Oshawa				3	2	15		3								
Pickering						2		2								
Port Perry				1	3	13		3								
Seagrave						3										
Sebright																
Sunderland						4	1									
Uxbridge			1	3		36		1					1			
Whitby				1	4	5	2									
Oxford—																
Beachville				1	1	3		1								
Bright						2										
Drumbo								1								
Embro						1										
Ingersoll	3	1	3	6	4	17	1	4								
Mount Elgin	1	3	2	1												
Norwich				3		1	1	4								
Otterville						4		1								
Plattsville			1			9		1								
Tavistock				1		5		1								
Thamesford			1													
Tillsonburg				1		8		2								
Woodstock	4	3	4	12	9	28	2	8					1			
Parry Sound—																
Ardbeg					1	3										
Burk's Falls				3		7	2	2								
Byng Inlet						1		1								
Kearney		1						3								
McKellar				1												
Nobel				1		1	1									
Parry Sound	2	4	5	17	7	14	1	8								
Powassan						6		4								
Rosseau																
South River																
Sprucedale					2	5										
Sundridge				1	1		2	1								
Peel—																
Alton	1	4	1			2		2								
Bolton						1	1	2								
Brampton			1			2	1	2								
Burnhamthorpe						2										
Caledon East				3		1		3								
Clarkson	4	3	2													
Cooksville																
Dixie																
Inglewood					1	2										
Lorne Park																
Mono Road								2								

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters				Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	
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..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	6
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	1	....	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	....	10
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	9	....	....	18
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	....	4
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Treponema Pallida.	
	+	—	+	—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—	+	—
Peel—Continued															
Palgrave				3		1									
Port Credit		2	2	5	3	6		1							
Streetsville			1	1	1	1	1								
Perth—															
Atwood						2		2							
Dublin															
Kirkton		4				4									
Listowel						7	1	1							
Milverton						3									
Mitchell			1		1										
Shakespeare						1									
Sebringville				1											
St. Mary's					1			4							
Stratford				5	6	22		2		2		1	1		
Peterboro—															
Bailieboro		6	1	4	1	4									
Hastings				2	1	6									
Havelock	6	3		2		2									
Keene							3								
Lakefield							1	1							
Norwood				4											
Oak Lake	1	2													
Peterboro	23	37	14	55	10	14	13	21		5			3		1
Prescott—															
Alfred			1			3		1							
Chute à Blondeau					1			2							
Fournier			1												
Hawkesbury			1	2	2	2	3	3							
L'Orignal															
Riceville	2			1											
St. Eugene	3			3		2									
St. Isadore de Prescott				2											
Prince Edward—															
Bloomfield						1		2							
Consecon			1	1											
Picton	1	2	1	6		2		1							
South Bay															
Rainy River—															
Barwick						1									
Fort Frances		1	1	1	1	3	1	1		1			1		
Rainy River						1									
Renfrew—															
Arnprior															
Eganville						9									
Jewellville			1	3		1									
Pembroke			1	3											
Renfrew	2	1			1	6	2	1							
Russell—															
Bourget	13	41	2	6	2	4									
Clarence Creek	2		1	1		1	1								
Navan								1							
Rockland						3									
Russell			1			4									

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	20
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	3	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	134	1	....	144
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	1	....	....	1	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	1	....	....	....	6
..	1	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	2	18	7	....	67
..	..	....	....	1	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	17
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	9
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	....	14
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	3
..	2	4 d'gs calf	3 1	1	..	....	....	..	..	....	....	....	....	...	....	....	....	10	11	3	227
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	3	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	3
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1	2	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	4	....	....	20
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	4	....	4
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..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
1	3	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	4	....	21
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	3	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	2	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	9
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	73	....	....	77
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	13
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	68
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	11	....	....	14
..	..	....	....	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	....	5

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis							
	Release		Diagnosis						Wassermann Reaction						Treponema Pallida.	
	+	−	+	−	+	−	+	−	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	−		+	−
Simcoe—																
Allandale						3										
Alliston								1								
Angus					1	1		1								
Barrie	2		1	4	4	16	6	15								
Camp Borden				1												
Collingwood				3		11				4			9			
Coldwater					1	2		1								
Cookstown		3	1	1		8		2		2			3			
Creemore						5	2	4								
Churchill						3		2								
Edgar		1	1	3				1								
Elmvale						1										
Hector				1												
Hillsdale							1	1					1			
Lefroy								1								
Midland			3	3	2	2										
Mattawa																
Orillia	37	69	38	178	6	19	7	17								
Penetang		1	1	9	2	23	1	3								
Phelpston				2		4										
Port McNicoll				4		1										
Stayner			1				1	2								
Stroud																
Thornton					1	1		7								
Victoria Harbor				7	2	8	2	5								
Waubaushene				3	1	2		1								
Stormont—																
Aultsville						2										
Cornwall				1	1	4				1			1			
Crysler					1	1										
Mille Roches						1	1	2								
Osnabruck Centre						2										
Sudbury—																
Chapleau				1	1	2	1									
Chelmsford						5										
Coniston				2	1	6	1	1								
Copper Cliff			1	2			1	3		1			3			
Massey				1												
Sudbury			3	2	8	22	2	5		2			2			
Timiskaming—																
Cobalt		1	1	7	3	18		1		4			5			
Cochrane		1	1	2	1	8	4	7								
Elk Lake					1	4										
Englehart			2													
Gowganda						3		3								
Haileybury				1	4	18	5	7								
Iroquois Falls			2	3	2	9										
Jacksonboro								1								
Kirkland Lake	3	7	3	5		2										
Matheson																
New Liskeard		1	4	11	2	18										
Schumacher																
Smooth Rock Falls							2	5								
South Porcupine						3	1									
Timmins								4								

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk											Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological											
										Tubercle Bac		Pus Cells									
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	6	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	4
1	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	16	3	1	69
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	14	....	12	....	5	58
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	22
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	11
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	2	....	4	....	....	16
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	471	21	70	934
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	2	42
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	3	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	15	....	1	25
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	1	28
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	31	1	1	44
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	11	....	22
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	1	....	....	....	....	....	....	..	..	....	....	....	....	....	....	1	1	170	16	1	236
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	42	6	....	88
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	18	1	....	43
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	5	....	....	11
1	3	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	24	3	....	66
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	78	....	94
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	18	....	....	38
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	1	41
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	12	....	....	19
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	1	8	....	....	13
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	6	....	....	10

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Treponema Pallida.	
	+	—	+	—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—	+	—
[redacted]															
Thunder Bay—															
Fort William	....	....	....	....	....	....	2	6	....	2	....	....	4	....	....
Jellicoe	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Loon Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Port Arthur	1	1	....	2	2	3	....	1	....	....	....	....	....	....	....
Schreiber	....	....	1	4	....	....	....	....	....	....	....	....	....	....	....
Victoria—															
Bobcaygeon	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Fenelon Falls	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....
Kinmount	4	3	1	2	1	1	....	1	....	....	....	....	....	....	....
Kirkfield	....	1	....	1	....	1	....	....	....	....	....	....	....	....	....
Lindsay	5	5	7	9	4	17	5	10	....	....	....	....	....	....	....
Little Britain	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....
Oakwood	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....
Omemee	....	3	1	3	2	5	1	1	....	....	....	....	....	....	....
Victoria Road	5	13	1	71	....	....	....	....	....	....	....	....	....	....	....
Woodville	....	....	....	....	2	1	1	2	....	....	....	....	....	....	....
Waterloo—															
Ayr	....	....	....	....	1	3	1	2	....	1	....	....	....	....	....
Elmira	....	....	....	3	....	3	1	2	....	....	....	....	....	....	....
Galt	4	1	6	12	3	30	....	2	....	....	....	1	4	....	....
Hespeler	....	....	....	2	2	1	....	....	....	....	....	....	....	....	....
Kitchener	45	255	28	95	8	37	1	1	....	....	....	....	....	....	....
Linwood	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
New Dundee	....	....	2	1	....	....	....	....	....	....	....	....	....	....	....
New Hamburg	5	7	2	3	1	9	....	6	....	....	....	....	....	....	....
Preston	....	....	....	....	2	3	2	....	....	....	....	....	....	....	....
Waterloo	3	7	6	4	1	7	2	1	....	....	....	....	....	....	....
Wellesley	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Winterbourne	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Welland—															
Bridgeburg	....	....	....	2	1	5	....	3	....	....	....	....	....	....	....
Chippawa	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....
Fenwick	....	....	....	....	1	3	3	1	....	....	....	....	....	....	....
Fonthill	....	....	1	1	....	....	....	1	....	1	....	....	1	....	....
Marshville	....	....	1	....	....	....	2	1	....	....	....	....	....	....	....
Niagara Falls	....	....	....	2	1	9	1	3	....	....	....	....	....	....	....
Port Colborne	....	....	....	....	2	3	....	1	....	....	....	....	....	....	....
Port Robinson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ridgeway	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Thorold	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Welland	2	5	4	8	2	3	5	5	....	....	....	....	....	....	....
Wellington—															
Alma	....	....	....	....	....	3	....	2	....	....	....	....	....	....	....
Arthur	....	1	1	....	3	2	....	....	....	....	....	....	....	....	....
Clifford	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Drayton	....	1	....	....	10	3	....	15	....	....	....	....	....	....	....
Erin	....	....	....	....	....	5	1	....	....	....	....	....	....	....	....
Elora	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....
Fergus	....	....	....	....	2	2	....	....	....	....	....	....	....	....	....
Glen Allan	....	....	....	....	5	9	....	2	....	....	....	....	....	....	....
Guelph	10	35	11	90	2	8	3	10	....	....	....	....	....	....	....
Harriston	....	....	....	....	1	....	1	2	....	....	....	....	....	....	....
Hillsburg	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....
Moorefield	....	....	....	....	1	1	....	....	....	1	....	....	....	....	....
Morriston	....	....	....	....	....	2	1	1	....	....	....	....	....	....	....

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

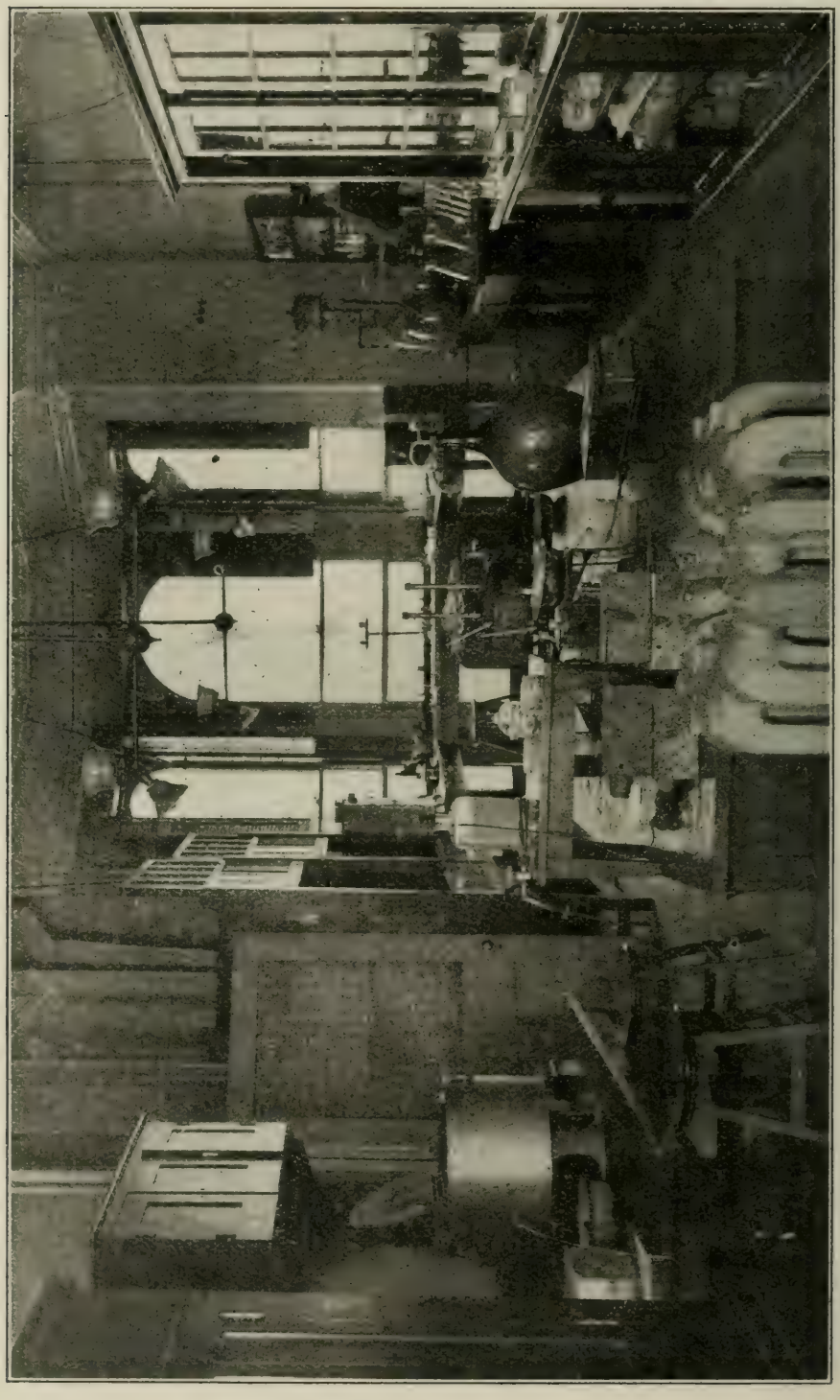
Gonorrhea		Rabies Diagnosis				Milk										Waters				
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial	Liquors for License Department	Miscellaneous Specimens	Total for Year
..	3	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	18
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	10
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	2
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	13
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	8	....	....	70
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	2d'gs	1	1	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	20
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	90
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	6	....	1	15
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	9
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	1	....	64
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	2	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	21	29	....	520
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	3
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	34
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	4	....	....	11
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	6	....	....	37
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	2	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	11
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	11	....	....	13
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	8
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	dog	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	29	1	....	46
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	1	....	9
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	....	....	....	....	15	1	....	17
1	1	2d'gs	2	....	....	....	....	..	..	....	....	....	....	....	....	....	....	19	33	1	91
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	1
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	1	....	33
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	1	....	....	7
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	3	....	....	5
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	16
..	1	sheep head	....	1	....	....	....	..	..	....	....	....	....	....	....	....	....	56	13	12	252
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	2	....	....	6
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	1	4
..	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	4

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

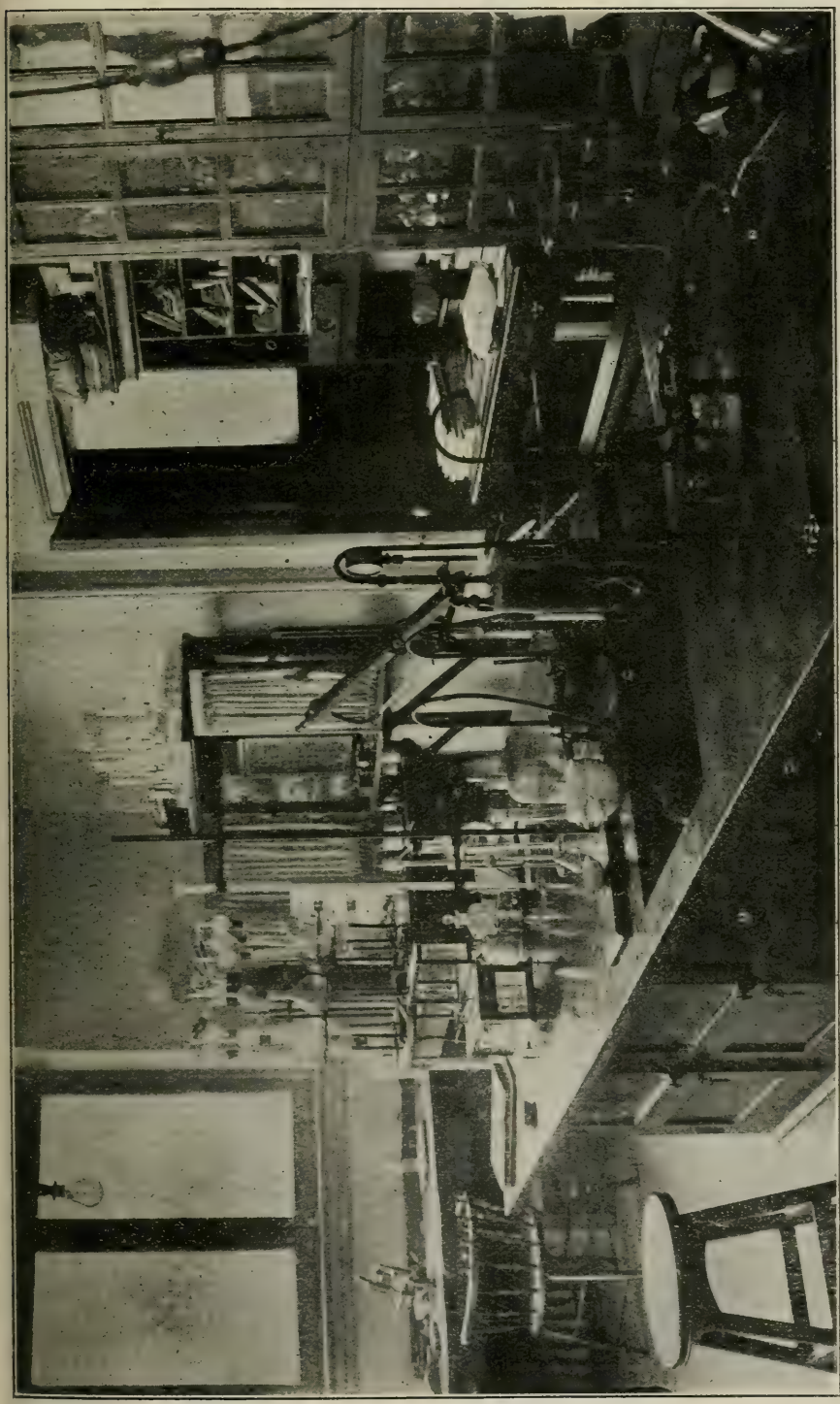
Municipalities	Diphtheritic Swabs.				Tuberculous Sputa		Typhoid Bloods.		Syphilis						
	Release		Diagnosis							Wassermann Reaction				Treponema Pallida.	
	+	—	+	—	+	—	+	—	Colloidal Gold Reaction	Very Strongly Positive	Strongly Positive	+	—	+	—
Wellington—Continued															
Mount Forest	....	....	....	....	2	8	2	....	....	....	....	....	....	....	....
Palmerston	2	2	1	1	....	1	....	1	....	....	....	....	....	....	....
Rockwood	1	2	....	3	....	....	....	....	....	....	....	....	....	....	....
Wentworth—															
Ancaster	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Bartonville	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Binbrooke	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....
Dundas	3	22	5	49	....	4	....	....	....	....	....	....	....	....	....
Freelton	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Hamilton	....	....	....	....	....	....	....	....	....	7	1	3	28	....	....
Lynden	....	....	....	1	1	1	....	....	....	....	....	....	....	....	....
Stony Creek	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Waterdown	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
York—															
Agincourt	....	....	1	2	1	1	....	....	....	....	....	....	....	....	....
Aurora	....	....	3	3	....	....	1	....	....	....	....	....	....	....	....
Birch Cliff	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fairbank	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Islington	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....
Keswick	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
King	....	....	....	1	....	4	1	....	....	....	....	....	....	....	....
Lambton Mills	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Langstaff	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Leaside	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Long Branch	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Markham	....	....	....	4	....	7	1	2	....	....	....	....	....	....	....
Maple	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mimico	18	49	69	359	1	5	1	....	....	....	....	....	....	....	....
Mount Albert	....	....	....	3	1	4	....	....	....	....	....	....	....	....	....
Mount Dennis	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Newmarket	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....
Newtonbrook	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Toronto	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Pefferlaw	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Pine Grove	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Richmond Hill	1	1	1	1	....	6	1	1	....	....	....	....	....	....	....
Scarboro	....	....	1	2	2	....	....	....	....	....	....	....	....	....	....
Schomberg	....	....	....	2	2	2	....	....	....	....	....	....	....	....	....
Stouffville	2	1	....	1	....	2	....	....	....	1	....	....	2	....	....
Sutton West	3	4	2	2	....	....	....	....	....	....	....	....	....	....	....
Swansea	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....
Todmorden	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Toronto	6	12	5	36	8	29	9	37	5	76	6	15	257	....	....
Weston	5	3	4	13	3	25	5	12	....	2	....	....	12	....	....
Willowdale	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Woodbridge	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....
Totals	412	1028	465	2059	385	1774	214	621	5	148	7	22	392	....	3

ONTARIO AT TORONTO FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Gonorrhea		Rabies Diagnosis				Milk										Waters		Liquors for License Department	Miscellaneous Specimens	Total for Year
			Negri Bodies			Food Content		Preservatives		Bacteriological										
										Tubercle Bac		Pus Cells								
+	—	Animal	+	—	Animal Inoculations	Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Number of Milk Samples	Chemical	Bacterial			
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	12
..	1	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	9
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	7
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	4	...	4
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	2
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	85
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	1
..	..	3d'gs	1	2	....	....	....	..	..	....	....	....	....	...	....	....	....	13	38	3	96
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	3
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	5	....	...	5
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	5
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	2	1	....	1	12
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	...	2
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	...	2
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	4
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	6
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	...	3
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	1	1	....	1	3
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	10	....	...	10
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	5	....	...	19
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	5	509
..	..	dog	...	1	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	9
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	3	2	...	7
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	1	4
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	...	1
..	..	dog	1	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	2
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	1
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	4	....	...	4
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	5	....	...	17
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	2	....	....	....	...	7
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	2	....	...	8
3	5	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	17
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	7	....	...	18
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	....	...	2
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	1	....	1	2
15	15	27dg's horse	9	18 1	....	....	....	..	..	....	....	....	....	...	....	6	2	128	478	125	1298
..	2	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	2	26	....	...	114
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	4	....	...	4
..	..	.....	...	....	....	....	....	..	..	....	....	....	....	...	....	....	....	....	4	...	6
44	67	.....	34	45	....	....	....	..	..	....	....	....	....	...	....	54	25	2732	895	327	11758



Portion of Bacteriological Laboratory.



Portion of Chemical Laboratory.

YEARLY REPORT.

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Algoma—													
Bruce Mines	2	2					5	9					
Creighton Mine	36				4			40	12	132			
Crean Hill Mine					2	2	2	6	15	70			
Espanola			4	12	2	1	1	20					
Foleyet	3				1	1	1	6		14	5		
Franz									30				
Hornepayne	6			4	2	2	2	16	36	14	5		
John Island									3				
Levack				12	12	10	13	47					
Nestorville				6				6					
Sault Ste. Marie	1	1	1		61	28	2	94		28	10		
Spragge									6				
Worthington				24				24	36				
Brant—													
Brantford	15		12	108		36	5	176	168			1	15
Burford									18				
New Durham									132				
Ohsweken										70	30		
Paris	6	6	6	12	15	16	6	67	50				
Bruce—													
Cargill					8			8					
Chesley										83			
Elmwood				4		5	6	15	9				
Kincardine				6	1	1	1	9					
Lucknow	1	1	1		1	1	1	6					
Paisley						1	1	2					
Port Elgin				8		7		15					
Ripley					4	6		10					
Teeswater				4				4					
Walkerton						2		2					
Wiarton	2	2	2		2	2	2	12	18	28			
Carleton—													
Ashton						2		2					
Carp					8			8					
Kinburn									75				
North Gower				2				2					
Ottawa	52	2	6	1	9	7	4	81	169	448	610	1	24
Westboro				124				124					
Dufferin—													
Orangeville					2		2	4					
Rosemount				4		2		6					
Shelburne									30				
Dundas—													
Morrisburg	1		1			25	12	39		14			
Durham—													
Bowmanville	12	6	14		6	34	22	94	36	54	5	1	24
Garden Hill				2	1	1	1	5	18	144			
Millbrook						5	27	32					
Newcastle	1	1	1		1	1	1	6					
Orono									9				
Port Hope	18		6	12	12	6	2	56	36	72	55	1	24
Elgin—													
Rodney				4		4		8					
Shedden				1	1		1	3					
Straffordville	3					1	1	5		14	5		
West Lorne				1	2			3					

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Essex—													
Amherstburg	....	....	....	15	.....	2	....	17	318	.....	.....	.....	.....
Belle River	....	....	....	.....	.....	.....	.....	.....	36	12	5	.....	.....
Comber	....	....	....	.....	.....	2	....	2	.....	.....	.....	.....	.....
Essex	....	....	....	.....	.....	.....	5	5	18	.....	.....	.....	.....
Ford City	....	....	....	6	3	5	3	17	.....	.....	.....	.....	.....
Harrow	....	....	....	8	2	2	....	12	18	.....	.....	.....	.....
Kingsville	....	....	....	30	6	3	3	42	.....	.....	.....	.....	.....
Leamington	3	.....	3	3	3	.....	3	15	66	.....	.....	.....	.....
McGregor	....	....	....	.....	1	1	1	3	.....	.....	.....	.....	.....
Ojibway	....	....	....	13	6	.....	....	19	.....	.....	.....	.....	.....
Pelee Island	2	2	2	.....	2	2	2	12	36	56	10	.....	.....
Sandwich	....	....	....	.....	.....	.....	.....	.....	105	.....	.....	.....	.....
South Woodslee	....	....	....	6	.....	.....	....	6	93	.....	.....	.....	.....
Tecumseh	....	....	....	4	84	3	2	93	.....	.....	.....	.....	.....
Walkerville	15	12	12	6	180	5	4	234	.....	.....	15	.....	.....
Windsor	50	25	50	130	301	25	25	606	15	84	.....	.....	.....
Frontenac—													
Inverary	....	....	....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....
Kingston	150	50	....	.....	.....	.....	....	200	.....	210	.....	.....	.....
Sharbot Lake	....	....	....	.....	.....	.....	.....	.....	18	.....	.....	.....	.....
Glengarry—													
Alexandria	....	....	....	.....	.....	2	....	2	33	.....	.....	.....	.....
Apple Hill	....	....	....	.....	1	1	....	2	.....	.....	.....	.....	.....
Dalhousie Mills	....	....	....	.....	1	4	1	6	.....	.....	.....	.....	.....
Dunvegan	....	....	....	.....	.....	2	....	2	.....	.....	.....	.....	.....
Maxville	....	....	....	24	.....	2	32	58	75	.....	.....	.....	.....
Williamstown	....	....	....	4	.....	.....	....	4	.....	.....	.....	.....	.....
Grenville—													
Bishop's Mills	....	....	....	.....	1	1	1	3	.....	.....	.....	.....	.....
Cardinal	3	.....	....	6	.....	.....	....	9	.....	.....	5	.....	.....
Merrickville	1	1	1	.....	1	1	1	6	.....	.....	.....	.....	.....
Prescott	2	.....	6	.....	.....	.....	....	8	38	.....	.....	.....	.....
Grey—													
Annan	....	....	....	.....	1	2	....	3	.....	.....	.....	.....	.....
Chatsworth	....	....	....	.....	26	.....	....	26	.....	.....	.....	.....	.....
Dundalk	1	1	1	.....	1	1	1	6	.....	.....	.....	.....	.....
Durham	....	.....	4	.....	3	3	3	13	.....	.....	.....	.....	.....
Flesherton	....	....	....	.....	2	4	2	8	.....	.....	25	.....	.....
Holstein	....	....	....	.....	.....	2	....	2	.....	.....	.....	.....	.....
Markdale	....	....	....	6	.....	.....	....	6	.....	.....	.....	.....	.....
Marmion	....	....	....	.....	2	5	2	9	.....	.....	.....	.....	.....
Meaford	....	....	....	1	.....	.....	....	1	.....	.....	.....	.....	.....
Owen Sound	8	8	20	48	.....	.....	....	84	84	.....	5	.....	.....
Priceville	....	....	....	.....	.....	.....	.....	.....	18	.....	.....	.....	.....
Haldimand													
Canfield	....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	2	48
Cayuga	....	....	....	12	.....	.....	....	12	9	.....	.....	.....	.....
Dunnville	1	1	1	6	1	1	11	22	52	.....	.....	.....	.....
Fisherville	....	....	....	.....	.....	.....	.....	.....	27	.....	.....	.....	.....
Hagersville	....	....	....	6	.....	.....	.....	6	3	.....	.....	.....	.....
Jarvis	....	....	....	.....	.....	2	....	2	.....	.....	.....	.....	.....
Lowbanks	....	....	....	.....	.....	.....	.....	.....	14	.....	.....	.....	.....
Haliburton—													
Haliburton	....	....	....	.....	.....	.....	.....	.....	.....	70	10	.....	.....
Minden	2	.....	2	2	1	1	1	9	9	90	10	.....	.....

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wasserman)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Halton—													
Acton				12	1	1	1	15					
Burlington	1	1	1	52	3	1	1	60				3	72
Georgetown					2	2		4					
Milton	3					4		7					
Oakville	18	2	8	24	4	2	4	62	6		5	2	48
Hastings—													
Actinolite				2				2					
Bancroft				2				2		90			
Belleville			6			7		13	81				
Deseronto					6	5	4	15	18				
Detlor				1				1		56			
Foxboro						2		2					
Frankford				4				4					
Madoc					1	1	1	3					
Marmora				22	1	3		26					
Maynooth									18				
Roslin									15				
Trenton					1	1	1	3	825				
Tweed									9				
Huron—													
Auburn					1	1	1	3					
Belgrave											5		
Brussels				1		3		4					
Ethel	4				1	1	1	7					
Exeter				10			1	11					
Goderich				12				12					
Seaforth	2		2		1	2		7			10		
Wingham				18	7	6	7	38					
Kenora—													
Kenora				8				8	120				
Kent—													
Bleuheim					4	4	4	12					
Chatham	31	3	3	50	11	14	13	125	108				
Dresden									6				
Merlin									9				
Ridgetown					6	7		13	9				
Thamesville	1	1	1		2	2	2	9		28	10		
Tilbury	12		12		2	5		31	18	36	10		
Wallaceburg				27		2		29					
Lambton—													
Alvinston	1	1	1	12	1	1	1	18	24				
Camlachie				3				3			5		
Forest					14			14		504			
Inwood	3	3	3		2	2	1	14		14			
Petrolia						2	84	86		42			
Port Lambton						1		1					
Sarnia				24		36		60					
Thedford					1	1	1	3	9	14			
Watford									18				
Lanark—													
Almonte						2		2	150				
Carleton Place				12		2		14					
Lanark							2	2	96				
Smith's Falls				96	3	1	2	102	375				

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued.

Municipalities	Outfits sent out.								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Leeds—													
Athens					2			2	15				
Brockville	4	4	4		7	16	4	39	24				
Lansdowne						2	6	8					
Mallorytown									24	28	10		
Lennox & Adding'n													
Napanee				30	6			36	60				
Tamworth									18				
Yarker									36				
Lincoln—													
Beamsville	3	1	1		2	2	2	11	27				
Grimsby				6		8		14				1	24
Jordan Station									75				
Merriton									6				
Niagara-on-the-Lake				12				12	9				
Port Dalhousie				1				1					
St. Catharines	22	1	8	12	20	33	7	103	24	56		1	24
St. David's				2				2					
Smithville					1	1	3	5					
Wellandport						2	2	4	30				
Manitoulin—													
Little Current				12	12	11	12	47					
Mindemoya					1	1		2					
Middlesex—													
Ailsa Craig	1	1	1		1	1	1	6	3				
Belmont					2			2					
Harrietsville					1			1					
Kerrwood				12				12					
Lambeth					2		2	4					
London	50		50	24				124	294	48			
Strathroy				26	3			29					
Muskoka—													
Bala									36				
Gravenhurst	14	2	12	8	14	2		52	54	184	20		
Port Carling									6				
Nipissing—													
Alderdale									72				
Algonquin Park				1				1					
Boston Creek				3				3					
Burwash	2	2	2		2	6	2	16					
Capreol										14	5		
Garson Mine				6				6					
Gowganda				2				2					
North Bay	16	4	4	77	18	24		143	28				
Sturgeon Falls	12	12	24			3		51			30		
Norfolk—													
Delhi	4		6		1	5	3	19					
Langton									63				
Port Dover				2		2		4	18	50			
Port Rowan									18				
Simcoe				6	6	6		18	81				
Vittoria				1				1					
Waterford				1	2	2	2	7	9				

YEARLY REPORT.

Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Northumberland—													
Brighton					2			2	18	47			
Campbellford					1	1	1	3					
Castleton				3				3					
Cobourg	2		2		1	13	1	19					
Colborne				4				4					
Warkworth									9				
Wooler									9				
Ontario—													
Beaverton				24			2	26	18				
Blackwater				3				3					
Cannington									27	48			
Oshawa			6	14	6	6	7	39	24				
Pickering				2	1	3	1	7					
Port Perry	2		2	7	2	2	2	17					
Seagrave						2		2	9				
Sunderland				2	1	1	1	5		46			
Uxbridge	3		2		6	2		13	18				
Whitby				21		6		27					
Oxford—													
Beachville										42			
Bright				4				4					
Drumbo						5		5					
Embro						2		2					
Ingersoll				36	14	8		58					
Mount Elgin					2			2					
Norwich	3		6	6	1	1	1	18			5		
Otterville									18				
Tavistock									9				
Thamesford									3				
Tillsonburg			2	6		2		10					
Woodstock	4			9	4	6		23	63				
Parry Sound—													
Ardbeg	1	1	1	12	1	11	1	28					
Burk's Falls	6					3	2	11	63				
Kearney				5	2			7	120				
Nobel				2	12			14					
Parry Sound	6		6	12	6	9	7	46		14			
Powassan									18				
Rosseau				8				8					
South River				1			2	3	9				
Sprucedale									9				
Sundridge				3			2	5	45		5		
Peel—													
Alton					2	2		4					
Bolton				6			7	13				1	24
Burnhamthorpe					1	1	1	3					
Caledon East				3	2	1	1	7					
Clarkson				1	2		1	4					
Cooksville												2	48
Port Credit					3	3		6					
Streetsville				1	1	1	1	4		98			

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Perth—													
Atwood				6				6	6	28	10		
Dublin				4				4	51				
Kirkton										42			
Listowel	12	4	12	138		13		179	24	14	5		
Milverton									36				
St. Mary's									9				
Sebringville					1	1	1	3					
Stratford	12			30	1	18	3	64	27				
Peterboro—													
Bailieboro				2				2					
Hastings					12	10		22					
Havelock				10	8			18					
Keene									12				
Peterboro	28	6	18	12	16	28	30	138	180	200	10	4	96
Prescott—													
Alfred				9		3		12					
Hawkesbury	2	2	14	2	2	2	3	27			5		
St. Eugene					4	2		6					
Vankleek Hill						1	1	2					
Prince Edward—													
Bloomfield									21				
Picton				6	2	2		10	24				
Rainy River													
Fort Francis	6		6		3	2	2	19		28	10		
Rainy River									350				
Renfrew—													
Cobden					6	6	6	18	45				
Douglas					2	2		4					
Eganville			4		1	1	1	7			10		
Jewellville						2		2					
Pembroke			12	72	1	1	1	87					
Renfrew					1	1	1	3					
Russell—													
Bourget					28			28	9				
Rockland				36				36					
Russell						1		1	30				
Simcoe—													
Alliston	1		1		1	1	1	5					
Barrie	12			42	2	8	2	66	150	26	50		
Coldwater					2			2					
Collingwood	28	6	6	16	2	4	2	64	36	42	15		
Cookstown	8	2	2			1		13	72				
Craighurst									3				
Craigvale				3				3					
Creemore					1			1	18				
Edgar					1			1					
Elmvale	1	1	1		1	1	1	6					
Hillsdale	1	1	1		1	1	1	6					
Midland					2	2		4					
Moonstone						2	2	4					
Orillia	3	3	3	483	103	13	14	622	225			1	24
Penetang	6				6	16	2	30		14			
Phelpston									18				
Stayner									27				
Victoria Harbor					8	8	6	22					
Waubaushene						2		2					

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Continued.

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Stormont—													
Cornwall	4	4	4		7	12	4	35					
Mille Roches											15		
Sudbury—													
Chapleau					1	1		2					
Chelmsford									36				
Coniston				24	2	3	2	31					
Copper Cliff	16	1	2		4	2	1	26	3	56			
Massey			3	1	1	1	1	7			5		
Sudbury	22	2	4	181	6	15	2	232	3				
Temiskaming—													
Cobalt	16			56	2	6	2	82					
Cochrane				12	2	3	6	23	9	660			
Elk Lake					1	1	1	3	75				
Englehart					2			2					
Haileybury	1		7	14	20	8	2	52	9				
Iroquois Falls	2		14	98	1	3	1	119	3000	70	5		
Jacksonboro				6	6	5	6	23	72				
Kirkland Lake				32	12			44					
Matheson				1				1	15				
Schumacher				4				4					
Smooth Rock Falls				18		4	2	24	600				
South Porcupine	1	1	1	15	1	1	1	21	150				
Timmins				8		2		10	12	202			
Thunder Bay—													
Fort William	14	2	10					26		596	25		
Jellicoe				3				3					
Nipigon										14	5		
Port Arthur					1	1	1	3	54				
Schreiber						2		2	45				
Victoria—													
Bobcaygeon				1				1					
Kinmount					2			2	18	98			
Lindsay				38	20	3	3	64					
Little Britain									12				
Omemee									18	56			
Victoria Road				39				39					
Woodville										105			
Waterloo—													
Ayr	10			2			1	13	18				
Galt	8		2	3	51	39	3	106		28			
Hespeler						2		2	18				
Kitchener				12	64	12		88					
Lynwood					1	1	1	3					
New Hamburg					12	10	12	34	18				
Preston						5		5					
Waterloo	1	1	1		9	1	1	14					
Welland—													
Bridgeburg					2	10	12	24		14			
Chippawa				18				18	30				
Fonthill	3	3	3					9					
Marshville	1	1	1		1	1	1	6		196			
Niagara Falls	20			41	2	4		67	60		35		
Port Colborne				12	2	3	3	20	180			1	24
Ridgeville									18				
Ridgeway						1		1	6				
Thorold				15				15				2	48
Welland			12	30	4	1	5	52	804	98	80	1	24

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Outfits, Vaccines and Treatments supplied by Laboratory at Toronto during the year 1917.—Concluded

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver nitrate for prevention of Ophthalmia	Pasteur preventive treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				cases	No. of Injections
Wellington—													
Alma	....	.....	....	6	.....	2	2	10	.....	.....	.....	.....	.....
Clifford	....	.....	....	.....	.....	1	....	1	.....	.....	.....	.....	.....
Drayton	....	.....	....	.....	2	1	2	5	126	.....	.....	.....	.....
Elora	....	.....	....	6	.....	.....	....	6	.....	.....	.....	.....	.....
Fergus	....	.....	....	.....	.....	2	....	2	15	.....	.....	.....	.....
Glenallan	....	.....	....	.....	.....	7	....	7	9	.....	.....	.....	.....
Guelph	....	.....	....	72	50	2	2	126	9	295	.....	.....	.....
Harriston	....	.....	....	.....	.....	10	....	10	.....	.....	.....	.....	.....
Moorefield	6	.....	....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....
Mount Forest	2	2	2	6	3	3	4	22	18	.....	.....	.....	.....
Palmerston	....	.....	....	.....	2	.....	....	2	9	.....	.....	.....	.....
Puslinch	....	.....	....	.....	.....	.....	.....	.....	.....	146	.....	.....	.....
Rockwood	....	.....	....	.....	4	3	....	7	.....	.....	.....	.....	.....
Wentworth—													
Bartonville	....	.....	....	6	.....	.....	....	6	.....	.....	.....	.....	.....
Binbrook	....	.....	....	.....	2	.....	1	3	.....	46	.....	.....	.....
Dundas	....	.....	....	4	18	2	....	24	18	.....	.....	.....	.....
Hamilton	242	.....	5	13	1	.....	....	261	1,089	445	25	3	72
Lynden	....	.....	....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....
Upper Hamilton	....	.....	....	3	.....	.....	....	3	.....	.....	.....	.....	.....
Waterdown	....	.....	....	12	.....	.....	....	12	.....	.....	.....	.....	.....
York—													
Agincourt	1	1	1	.....	1	2	1	7	27	.....	.....	.....	.....
Aurora	....	.....	....	.....	.....	.....	....	.....	.....	.....	15	.....	.....
Birchcliff	....	.....	....	1	.....	.....	....	1	.....	.....	.....	3	72
Etobicoke	....	.....	....	.....	1	1	1	3	.....	.....	.....	.....	.....
Islington	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	1	24
Jackson's Point	....	.....	....	3	.....	.....	....	3	.....	.....	.....	.....	.....
King	....	.....	....	.....	.....	.....	.....	.....	30	.....	.....	.....	.....
Lambton Mills	....	.....	....	4	.....	.....	....	4	.....	.....	.....	.....	.....
Langstaff	....	.....	....	2	.....	.....	....	2	.....	.....	.....	.....	.....
Leaside	....	.....	....	6	.....	.....	....	6	.....	.....	.....	.....	.....
Long Branch	....	.....	....	4	.....	.....	....	4	.....	.....	.....	.....	.....
Markham	....	.....	....	4	1	1	1	7	.....	.....	.....	.....	.....
Mimico	....	.....	....	.....	179	5	3	187	620	.....	.....	.....	.....
Mount Albert	....	.....	....	.....	.....	.....	2	2	.....	28	.....	.....	.....
Mount Dennis	....	.....	....	1	.....	.....	....	1	.....	.....	.....	.....	.....
Newmarket	....	.....	....	1	.....	.....	....	1	.....	.....	.....	.....	.....
Newtonbrook	....	.....	....	2	.....	.....	....	2	.....	.....	.....	.....	.....
Richmond Hill	....	.....	....	.....	2	.....	....	2	.....	.....	.....	.....	.....
Scarboro'	....	.....	....	.....	.....	.....	....	.....	18	.....	.....	.....	.....
Schomberg	....	.....	....	2	.....	.....	....	2	.....	.....	.....	.....	.....
Stouffville	6	.....	....	.....	.....	.....	....	6	.....	.....	.....	.....	.....
Sutton West	....	.....	....	12	3	3	....	18	9	158	.....	.....	.....
Swansea	....	.....	....	.....	.....	.....	.....	.....	.....	72	5	.....	.....
Thornhill	....	.....	....	.....	.....	.....	.....	.....	.....	14	.....	.....	.....
Toronto	350	13	28	56	18	11	....	476	2,959	620	35	28	672
Weston	18	1	2	12	12	16	3	64	90	.....	5	.....	.....
Willowdale	....	.....	....	4	.....	.....	....	4	.....	.....	.....	.....	.....
Woodbridge	....	.....	....	1	.....	.....	....	1	.....	.....	.....	.....	.....
Total	1492	217	514	3,316	1,793	1,025	619	8,976	17,144	7,577	1,240	60	1,431

REPORT OF THE BRANCH LABORATORY OF THE BOARD AT LONDON (INSTITUTE OF PUBLIC HEALTH)

The number of Laboratory examinations made by the Branch Laboratory of the Provincial Board of Health at London (Institute of Public Health) in 1917 shows a marked increase over 1916. The increase was 30.5 per cent. There has also been an increase of 8.3 per cent. in the number of communities taking advantage of the laboratory service.

Examinations.	1916	1917	Increase
Diphtheria Swabs	2,512	4,052	61.4%
Tuberculous Sputa	955	810	—
Typhoid Blood	197	148	—
Milk (samples examined for fats and preservatives)			
Milk (Bacteriological Analysis)			
Water (Chemical Analysis)	169	117	—
Water (Bacteriological Analysis)	221	159	—
Total	4,050	5,286	30.5%
Communities served	96	104	8.3%

Outfits, Vaccines and Treatments supplied by the Laboratory at London during the year 1917.

Outfits sent out:	
Syphilis (Wassermann)	41
Syphilis (Treponema Pallida)	..
Gonorrhœa	18
Water	37
Diphtheria	52
Tuberculosis	61
Typhoid	19
Total	228
Communities served	17

H. W. Hill,
Director.

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Rabies Diagnosis			
	Release		Diagnosis						Animal	Negri Bodies		Animal Inoculations
	+	−	+	−	+	−	+	−		+	−	
Brant—												
Brantford							11					
Paris				4	4	5						
Bruce—												
Lucknow						1						
Mildmay					1	4						
Southampton					3	1						
Wiarton						1						
Elgin—												
Dutton				2		2						
St. Thomas							1	3				
Wallacetown		1	1	2		1						
West Lorne		3	2	1			2					
Essex—												
Belle River												
Comber								1				
Ford City		2		3	1			1				
Harrow			1	2		3						
Kingsville	1	4	1	4		2						
Sandwich			1									
Tecumseh	2	75	5	22			1					
Walkerville	41	322	8	336	2	11	3	2				
Windsor	103	614	11	361	2	6	2	1				
Huron—												
Blyth						2						
Brucefield					2	1		2				
Exeter				1								
Seaforth												
Wingham				1								
Zurich				1								
Clinton							1	1				
Kent—												
Blenheim		1	2	2	3	5	1	2				
Chatham			1	2	4	6	1	7				
Duart				2		1						
Goderich			1	3	3			5				
Merlin				1								
Ridgetown	2	5		1		5	1	4				
Thamesville				7	1	7		1				
Tilbury				1			1					
Wallaceburg				1		1	1	3				
Wheatley						2						
Lambton—												
Arkona			1	1								
Brigden					1	1						
Camlachie					1	3		1				
Florence												
Forest				1								
Inwood		1		2		4		1				
Petrolia				1		2						
Pt. Lambton						1		1				
Sarnia					3	5						
Thedford					1	1						
Watford				2	1	9		3				
Wyoming		2	1	1		1		3				

ONTARIO AT LONDON FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Milk										Waters				
Food Content		Preservatives		Bacteriological										
				Tubercle Bac.		Pus Cells								
Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Chemical	Bacterial	Liquors for License Dept.	Miscellaneous Specimens	Total for year
														1
														13
														1
														5
										1				5
														1
														4
														4
														5
														8
														1
														7
														6
										6	5			23
														1
														105
														725
														1,100
														2
														5
										1	1			3
										3	3			6
														1
														1
														2
														16
														21
														3
										2	2			16
														1
										4	4			26
														16
														2
														6
														2
														2
														2
										3	3			11
										1	1			2
														1
														8
														3
														2
										1	1			10
										2	2			6
														15
														8

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Rabies Diagnosis			
	Release		Diagnosis							Negri Bodies		
	+	−	+	−	+	−	+	−	Animal	+	−	Animal Inoculations
Lincoln—												
Grimsby						1		1				
Bismark								1				
Middlesex—												
Adelaide					1							
Belmont		2	2	6		2						
Byron San				2	17	83						
Delaware												
Dorchester			1	1								
Glencoe						4		1				
Granton		1		17	2	2						
Harrietsville				1								
Hyde Park					1	2						
Komoka												
Lambeth				1	2	7						
London	100	422	180	1,249	70	407	11	49				
Lucan			5	34	2							
Melbourne						3						
Mt. Brydges					2	4						
Newbury						1						
Parkhill				3		3						
Poplar Hill						2						
Strathroy				1	3	2						
Wardsville						1						
Muskoka—												
Severn Bridge					1							
Norfolk—												
Langton						1						
Port Dover						1						
N'thumberland & Durham												
Millbrook						1						
Oxford—												
Bright							1	1				
Embro					1	2	6	3				
Ingersoll				3	2	7						
Innerkip				2	1	2						
Lakeside						5						
Mount Elgin												
Norwich								1				
Princeton								1				
Tavistock												
Thamesford	2	2	1	2	1	3	1					
Tillsonburg				2								
Woodstock				5	2			1				
Perth—												
Fullerton								1				
Listowel				1	1		1	2				
St. Mary's				1	1	5	1					
Sebringville						2						
Stratford					1	2						
Rainy River—												
Emo						1						
Fort Francis					1	1	1					

ONTARIO AT LONDON FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Milk										Waters				
Food Content		Preservatives		Bacteriological										
				Tubercle Bac.		Pus Cells								
Fats	Total Solids	+	−	+	−	+	−	Count	Extraneous Matter	Chemical	Bacterial	Liquors for License Dept.	Miscellaneous Specimens	Total for Year
														2
														1
														1
														12
										13	24			139
														.....
														2
														5
														22
														1
														3
										6	6			12
														10
										38	72			2,598
														41
														3
										2	2			10
														1
														6
														2
										2	2			10
														1
														1
														1
														1
														1
										1	1			4
														12
										13	13			38
										1	1			7
														5
										11	11			22
														1
														1
										1	1			2
														12
														2
														8
														1
														5
										1	1			10
														2
										1				4
														1
														3

REPORT FROM LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH OF

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Rabies Diagnosis			
	Release		Diagnosis									
	+	—	+	—	+	—	+	—	Animal	Negri Bodies		Animal inoculation
										+	—	
Timiskaming—												
Smooth Rock Falls												
Waterloo—												
Galt		5	2	9		7		2				
Kitchener				1				1				
New Dundee								2				
New Hamburg			1									
Preston						3						
Waterloo						1	1					
Wellesley				1								
Wellington—												
Rockwood				1								
Palmerston						3						
York—												
Toronto												
Totals	251	1462	228	2,111	145	665	39	109				

ONTARIO AT LONDON FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Milk										Waters				
Food Content		Preservatives		Bacteriological										
				Tubercle Bac.		Pus Cells								
Fats	Total Solids	+	—	+	—	+	—	Count	Extraneous Matter	Chemical	Bacterial	Liquors for License Dept.	Miscellaneous Specimens	Total for year
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	.....
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	25
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	2
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	2
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	1
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	3
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	2
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	1
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	1
.....	.....	.....	.....	.....	.....	.....	....	....	....	.....	.....	....	.....	3
.....	.....	.....	.....	.....	.....	.....	....	....	....	3	3	....	.....	6
.....	.....	.....	.....	.....	.....	.....	....	....	....	117	159	....	.....	5,286

Outfits, Vaccines and Treatments supplied by Laboratory at London during the year 1917:—

Municipalities	Outfits sent out								Doses of Typhoid-paratyphoid Vaccine supplied	Whooping Cough Vaccine	Silver Nitrate for prevention of Ophthalmia	Pasteur Preventive Treatment	
	Syphilis (Wassermann)	Syphilis (Treponema Pallida)	Gonorrhea	Water	Diphtheria	T.B.	Typhoid	Total				Cases	Number of Injections
Essex—													
Belle River	6	.....	6	....	6	10	6	34	.....	....	.....	....	.....
Kent—													
Chatham	3	.....	2	....	....	....	....	5	.....	....	.....	....	.....
Merlin	4	.....	....	....	....	....	....	4	.....	....	.....	....	.....
Lambton—													
Thedford	....	.....	....	2	....	....	....	2	.....	....	.....	....	.....
Middlesex—													
Byron San	4	.....	....	23	....	33	....	60	.....	....	.....	....	.....
Delaware	....	.....	....	3	....	....	....	3	.....	....	.....	....	.....
Komoka	6	.....	....	....	....	....	....	6	.....	....	.....	....	.....
London	....	.....	....	....	16	5	7	28	.....	....	.....	....	.....
Lucan	....	.....	....	....	12	6	....	18	.....	....	.....	....	.....
Strathroy	....	.....	....	....	6	6	6	18	.....	....	.....	....	.....
Oxford—													
Ingersoll	....	.....	2	....	....	1	....	3	.....	....	.....	....	.....
Innerkip	....	.....	....	1	....	....	....	1	.....	....	.....	....	.....
Thamesford	....	.....	....	....	12	....	....	12	.....	....	.....	....	.....
Woodstock	3	.....	2	....	....	....	....	5	.....	....	.....	....	.....
Perth—													
St. Mary's	....	.....	....	1	....	....	....	1	.....	....	.....	....	.....
Timiskaming—													
Smooth Rock Falls	6	.....	6	6	....	....	....	18	.....	....	.....	....	.....
Waterloo—													
Galt	9	.....	....	1	....	....	....	10	.....	....	.....	....	.....
Totals	41	.....	18	37	52	61	19	228	.....	....	.....	....	.....

REPORT OF THE BRANCH LABORATORY OF THE BOARD AT KINGSTON

The Chairman and Members of the Provincial Board of Health:

GENTLEMEN.—I have the honour to submit the report of the work done in the local Laboratory of the Provincial Board of Health during the year 1917.

In this year 4,692 specimens were examined as per appended table.

Diphtheria:—		
Swabs for Release from Quarantine		520
Positive	151	
Negative	369	
Swabs for Diagnosis		679
Positive	129	
Negative	550	
Sputums for Tubercle Bacilli		1,513
Positive	308	
Negative	1,205	
Blood for Typhoid Reaction		430
Positive	89	
Negative	341	
Syphilis—Wassermann Reaction		165
Positive	24	
Negative	141	
Water for Bacteriological Analyses		538
Milk for Examination (Preservatives, Tubercle Bacilli, etc.)		6
Miscellaneous Samples		841
Total		4,692

Respectfully submitted,

W. T. CONNELL,

Assistant Bacteriologist.

REPORT FROM BRANCH LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis		Rabies Diagnosis			
	Release		Diagnosis						Wassermann Reaction					
	+	—	+	—	+	—	+	—	+	—	Animal	Negri Bodies +	Negri Bodies —	Animal Inoculations
Algoma—														
Richard's Landing						1								
Bruce—														
Paisley		1		2		1	3	6						
Carleton—														
Manotick			1			3								
North Gower														
Ottawa					1	1	2		4					
Richmond					2	1	1							
Dundas—														
Brinston					1									
Chesterville					1	3		1						
Winchester			1		1	7	2	9						
Essex—														
Essex			1	2	1	10	1	2						
Leamington				1										
Frontenac—														
Barriefield						1								
Flinton					1	2								
Harrowsmith					1	1	1	4						
Inverary			1			1		1						
Joyceville						2								
Kingston	124	310	79	422	97	598	31	129	13	122				
Portsmouth			1	7	131	242		4	2					
Sydenham			2	4	1	2		4						
Verona				3		3	2	5						
Wolfe Island							1	6						
Glengarry—														
Alexandria														
Dalhousie Mills						3	1	1						
Dalkeith					1	4								
Lancaster			2											
Maxville						7		1						
Williamstown						3								
Grenville—														
Cardinal						3								
Jasper					1			1						
Kemptville				2		1	1	1						
Merrickville								2						
Prescott						2	2	2						
Halliburton—														
Minden						3		1						
Hastings—														
Bancroft					1	8		4						
Belleville		1	1	11	16	30	9	33	1	2				
Deseronto		7	1	6		10	1	2	1	1				
Foxboro				1	2	1								
Marlbank					1			1						
Roslin			1	1	1	5		4						
Shannonville						2								
Stirling		3	2		1									
Trenton						4		1						
Tweed					3	1								
Huron—														
Wingham	4	4	12	5		1		1						

OF ONTARIO AT KINGSTON FOR THE YEAR 1917.—SPECIMENS EXAMINED.

Milk								Waters				
Food Content		Preservatives		Bacteriological								
Fats	Total Solids	+	—	Tubercle Bac. +	Tubercle Bac. —	Pus Cells +	Pus Cells —	Count	Extraneous Matter	Chemical	Bacterial	Miscellaneous Specimens	Total for Year
													1
													13
													4
											1		1
											1		9
													4
													1
													5
													20
												1	18
													1
1			1								46	1	50
													3
											1		8
											3		6
											1		3
2			2								322	275	2,526
											8	5	400
													13
											3		16
													7
											1		1
													5
													5
													2
													8
											1		4
													3
													2
												1	6
												3	5
											3	1	10
												1	5
													13
											1	298	403
											10		39
												1	5
													2
													12
													2
													6
												1	6
												1	5
													27

REPORT FROM BRANCH LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis	Rabies Diagnosis			
	Release		Diagnosis						Wassermann Reaction				
	+	—	+	—	+	—	+	—	—	Animal	Negri Bodies +	Negri Bodies —	Animal Inoculations
Lanark—													
Almonte						1		1					
Carleton Place					1	13	3	12					
Lanark								1					
McDonald's Cor's.					2	5							
Perth						1	1	1					
Smith's Falls			1	1	3	30	4	12					
Leeds—													
Athens						3							
Brockville	4	5	7	28	12	25	4	10	2	7			
Chaffey's Locks													
Delta						1							
Elgin				1		1		2					
Frankville					1	1							
Gananoque				1	1	11		2					
Lansdowne			1	6		6	2	4					
Lyn						1							
Mallorytown				3		1							
Newboro				1									
Westport			1	1	2	2		2					
Lennox and Add'n.													
Bath						4	1	3					
Denbigh						1							
Enterprise						1							
Napanee		1	2	2	6	17	1	2		3			
Newburg						3		2					
Odessa						12		4					
Tamworth						1		3					
Yarker						1	1	4					
Northumberland & Durham—													
Campbellford						1	1	1		2			
Cobourg					1	1	1	7					
Port Hope	8	2	3	1		1							
Roseneath						1							
Peterboro—													
Hastings					1			2					
Peterborough						4		2					
Warkworth													
Prescott & Russell													
Bourget	7	25											
Casselman													
Fournier	2	5	2	6	1	3							
Hawkesbury						6	1	3					
Metcalfe				2		2							
Orleans						1							
St. Eugene						1							
Prince Edward—													
Picton						4	1	1					
Renfrew—													
Arnprior			1	1	1	2			1				
Calabogie				3				1					
Cobden				1	3	15		2					
Douglas	2	2		5	1	3		2					
Killaloe						5							
Pembroke				1	4	11				1			

OF ONTARIO AT KINGSTON FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Milk										Waters.			
Food Content		Preservatives		Bacteriological									
Fats	Total Solids	+	—	Tubercle Bac. +	Tubercle Bac. —	Pus Cells +	Pus Cells —	Count	Extraneous Matter	Chemical	Bacterial	Miscellaneous Specimens	Total for year
													2
												5	34
													1
													7
											7		10
												2	53
													3
											62	232	398
											6		6
											2		3
											1		5
													2
													15
												1	20
													1
													4
											6		7
													8
													8
													1
													1
											25	3	62
													5
												1	17
													4
											4		10
													5
													10
												1	16
													1
													3
													6
											1		1
													32
											1		1
													19
												1	11
													4
													1
													1
													6
											4		10
													4
													21
													15
													5
													17

REPORT FROM BRANCH LABORATORIES OF THE PROVINCIAL BOARD OF HEALTH

Municipalities	Diphtheritic Swabs				Tuberculous Sputa		Typhoid Bloods		Syphilis		Rabies Diagnosis			
	Release		Diagnosis						Wassermann Reaction					
	+	−	+	−	+	−	+	−	+	−	Animal	Negri Bodies +	Negri Bodies −	Animal Inoculations
Renfrew—Contin'd.														
Petawawa				2		2				1				
Renfrew		3	1	10		13	1	2		1				
Westmeath						1								
Simcoe—														
Barrie							6	13						
Churchill						3		1						
Stormont—														
Cornwall			4	2	2	6	1	8		1				
Finch			1	2		4		1						
Mille Roches								1						
Newington				2	1	5	2	3						
Timiskaming—														
Cochrane				1										
Wentworth—														
Hamilton						1								
Grand Total ..	151	369	129	550	308	1,205	89	341	24	141				

OF ONTARIO AT KINGSTON FOR THE YEAR 1917.—SPECIMENS EXAMINED.—*Con.*

Milk								Waters					
Food Content		Preservatives		Bacteriological									
Fats	Total Solids	+	—	Tubercle Bac. +	Tubercle Bac. —	Pus Cells +	Pus Cells —	Count	Extraneous Matter	Chemical	Bacterial	Miscellaneous Specimens	Total for Year
											5		10
											11	5	47
													1
													19
											1		5
													24
													8
													1
													13
												1	2
													1
3			3								538	841	4,692

APPENDIX "A"

APPENDIX "A"

The reports appearing in this Appendix were received from the Secretaries of the Local Boards of Health of the cities and towns of the Province of Ontario, in conformity with section 23, ss. 3, of the Public Health Act, and have been edited by the Secretary of the Board.

BRANTFORD, November 1st, 1917.

To the Chairman and Members of the Local Board of Health.

GENTLEMEN,—The following is a brief report of the department for the year ending October 31st, 1917:—

MORTALITY STATISTICS.

For the year of this report there has been registered, exclusive of still births, 308 deaths, which in a population as given by the assessors of 27,664, gives a mortality rate of 11.1 per thousand. Among the causes were found:—

Tuberculosis	13
Pneumonia	43
Meningitis (tubercular)	6
Croup and Diphtheria	6
Typhoid fever (one an outside case)	2
Whooping cough	2
Cholera infantum	3

As to ages—38 were over 80 years of age.
90 were over 60 years of age.
69 were under 1 year.
22 between 1 and 5 years of age.

INFECTIOUS DISEASES.

For the past twelve months there has been reported in all 105 cases of infection, with 10 deaths, being one of the lowest on record, and as compared with the year preceding, when we had 411 cases, is quite satisfactory, and were as follows:—

Diphtheria and Croup: of this class there were 15 cases—6 deaths.
Scarlet fever: 11 cases—no deaths.
Measles: 44 cases—no deaths.
Spinal meningitis: 1 case.
Infantile paralysis: 1 case.
Typhoid fever: 28 cases—2 deaths, one being an outside death which occurred at the hospital.

It is in connection with the matter of typhoid fever that I wish to call your attention in this report, as the known factors in the spread of this disease are largely in water and milk supplies. In the recent outbreak the matter of milk has been demonstrated as an indubitable source, and it is to my mind worth going definitely into as follows:—

In the latter part of August, within a few days of each other, reports of typhoid fever began to come in, and, what was most apparent, that in each the milk supply was the same, and took the matter up at once and investigated the condition of the supply and its source. Three supplies were being distributed by this one vendor where local conditions were good, but found that the one supply which had been distributed practically separate was the one on which the typhoid cases have developed. On further investigation of the supplies in the one particularly above noted, in which stable, cattle, etc., were in apparently good condition, it was found that one of the members of the family a year previously had typhoid fever from which she made but a fair recovery. The period of time that had elapsed would probably render the cause of infection from this source out of the question, but it was found otherwise, as this member of the family, being at once suspected as a carrier, investigation showed that although every care apparently being taken in the way of washing up any vessels, which after washing were placed on a bench in the rear of the kitchen where

the sun would strike them. All very good, but a closet some 60 feet away which had been used by all the family and the suspect as well became the menace when the fly season developed which would be about August. This was the theory applied which was further proven that the suspect still had the bacillus in her system. Excrement from closet developed the same share of bacillus, as also did the son, who afterwards developed the disease, as did the son of the vendor. This has been given more in detail that we might understand that in milk we have a commodity that may be a great conductor of disease when every apparent condition surrounding it would appear normal, for out of this one carrier no less than 20 cases developed in the supply and which immediately ceased when the supply was cut off. This of course brings up the matter of what shall we do to prevent further outbreaks from such or other infections, for as milk is a universal food it is evident that a universal method of dealing with it should be adopted for rendering it safe food for all, for notwithstanding the improvements in the care of herds, stables, and milking, the methods at present on account of shortage of labor and necessarily hurried care that is given the milk from the cow to the consumer leaves something lacking in the chain of safety. Therefore I am compelled to state, that to my mind, the only method that can be adopted to render it safe to the consumer is the proper sterilization of the supply immediately before it reaches him. And to this end I am asking you as a Board to consider the matter and have the incoming council have by-laws prepared for such.

This of course means expense to the vendors and thus to the consumer, but as compared with the loss of lives, etc., which a community may suffer as it did in the recent outbreak, is incomparable. Moreover, without going into details, I might add if it had to be adopted as public-owned institution the money would be well invested in the guarantee of a pure supply, which would not alone reduce the infant mortality, but would reduce many ailments that are now known to originate from sources of infected milk.

The above I submit for your consideration.

F. G. E. Pearson,
Medical Officer of Health.

CHATHAM.

Dr. T. L. McRitchie, M.O.H.

During the year 1917 there have been 253 deaths registered. Of this number 68 were non-residents of the city. The remaining 185, as belonging to the city, gives a death rate for the year of 13 per one thousand of population. Total number of births for the same period was 303, a birth rate of 22 per every thousand. This gives an increase of 118 births over the total deaths of the city.

There have been 216 cases of communicable diseases reported during the year, with but two deaths, viz.: one of a very virulent type of scarlet fever, the glands about the face and neck all suppurating, the victim living only forty-eight hours. The other case was one of diphtheria that had not been reported until the sixth day, when medical assistance was called in; even at this date, after repeated large doses of antitoxin, it looked like an even chance after the first forty-eight hours, until the mother, disobeying instructions, raised the patient up for nourishment collapsed in her arms.

Scarlet Fever.—There have been seventeen cases; most of these can be traced to Detroit, where a severe epidemic was raging for some months during the first half of the year.

Measles.—There were 114 cases, there being 17 in February, 52 in March, 20 in April, while the other 25 cases were spread over a number of months. No deaths.

Chicken-pox.—Forty-seven cases. Of these twenty-four were in the last quarter of the year 1916. No deaths.

Smallpox.—We had one typical case, that of a boy 15 years of age, a profuse rash appearing over the whole body, face and scalp, palms of hands and soles of feet, leaving the bluish pock-mark. The party became infected through contact with some of the French people of the adjoining township of Dover, where are some cases almost every year. Prompt action in quarantining and vaccinating of all persons exposed prevented a further outbreak.

Diphtheria.—There were 29 cases; many of these are traceable to Detroit; young adults who were working in that city, not feeling well, came home, where in a number of instances the disease was diagnosed the same day. One death I believe due to lateness in calling a physician that the antitoxin might have been given early and in large doses.

Tuberculosis.—Two cases, both of long standing and both fatal.

Mumps.—Six cases; no sequelæ.

I might say that the greatest difficulty in controlling these communicable diseases is the neglect of many people to call in the family physician early before many others have been exposed. Of the medical men I have no complaint to make, as the rule is promptness.

During my term of office since the 1st of February I have made tests of 108 samples of milk. Most of these were highly satisfactory, our local by-law requiring 3.5 per cent. of B.F., and in many instances the percentage being over 4 p.c.

Owing to the great and almost daily rainfall during the spring and early summer, the Water Commissioners had much difficulty in giving the citizens the usual supply of pure water, since our supply is taken from the river Thames, into which there are so many large drains or dredge canals empty. After every heavy rainfall there is a freshet which carries many impurities into our source of supply.

Public lavatories have been inspected at regular intervals and are being kept in fair condition. I also enclose the Sanitary Officer's report.

DAVID HOLMES, SANITARY INSPECTOR.

Sanitary Inspector's Report for year ending November 30th.

I have put up 198 contagious disease cards, disinfected premises and persons on 206 different occasions during the year. Have had 185 complaints made to me and have investigated them all, and in each case had the complaint attended to. Inspected all the cellars twice during the year, and the slaughterhouses three times.

Went to the country and inspected the different farm buildings occupied by the cows that supply milk to the city milk dealers. Inspected the different milk depots frequently during the year. Gathered one hundred and twelve samples of milk for the M.O.H. for testing purposes and assisted in this work. Inspected all the butcher shops six different times. Have had 1,145 closets cleaned during the year thus far. Collected water eleven different times and expressed the same to Toronto for analysis as to its purity for drinking purposes, having received orders from the M.O.H. Inspected the laundries 52 times and the cafes twelve times during the year.

As Humane Officer have had 14 different cases to attend to, being necessary to lay up six different horses until fit for work. As weed inspector had charge of the weed cutters from the 10th of June till the 15th of September. This last year I think there has been a great improvement over previous years, with still room for further improvement.

FORT WILLIAM.

DR. E. B. OLIVER, M.O.H.

In accordance with the provisions of the Ontario Public Health Act, I beg to submit herewith my annual report for the year ending October 31st, 1917.

You may recollect that last year I stated that the most outstanding feature of my report was that we had but two deaths from typhoid fever. This year I am delighted to say that we have not had a death. I have been able to trace statistics back fifteen years in the municipality, and this is the first year in which there has not been a death from typhoid fever in that time. Furthermore, the decrease both in morbidity and mortality has been gradual, so that I feel sure that it will be permanent.

The mortality from reportable diseases has decreased fifty per cent., there having been twenty-one deaths this year and forty-three last year. This is an excellent showing and one which I trust we shall be able to continue.

We ran over our estimate this year on account of the expanded salaries and the purchase of an automobile.

Vital Statistics.

Estimated population	18,000
Death rate per 1,000 population (excluding still births)	12.66
This rate includes all who died in the municipality, whether residents or not.	
Birth rate per 1,000 population (excluding still births)	41.22
This is 6.63 lower than last year.	
Infant mortality rate per thousand births	133.42
This rate is higher than last year's.	

Communicable Diseases.

Smallpox.

There were two cases of smallpox reported. Statistics for the last five years follow:

Year.	Cases reported.	Deaths.
1913	11	0
1914	0	0
1915	8	0
1916	3	0
1917	2	0

Scarlet Fever.

There were one hundred and ten cases of scarlet fever reported. This is exactly the same as 1914. There were three deaths. Statistics follow:

Year.	Cases reported.	Deaths.
1913	45	1
1914	110	2
1915	18	0
1916	4	0
1917	110	3

Below appear the statistics by month, age and sex, recovery and death.

Month.	Cases.	Sex. M.	Sex. F.	Under 5 years.	5–9 years.	10–14 years.	15–19 years.	Over 19 years.	Recovery.	Death.	
1916											
November	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	3	2	1	1	2	.....	.....	.....	3	.....	.....
1917											
January	4	2	2	.....	3	1	.....	.....	3	1	7 yrs.
February	1	....	1	.....	.....	1	.....	.....	1	.....	.....
March	4	4	....	2	1	1	.....	.....	4	.....	.....
April	3	2	1	.....	2	.....	.....	1	2	1	6 yrs.
May	6	3	3	2	4	.....	.....	.....	6	.....	.....
June	5	3	2	2	1	.....	1	1	5	.....	.....
July	10	4	6	3	5	2	.....	.....	9	1	7 yrs.
August	16	6	10	8	6	1	.....	1	16	.....	.....
September	36	15	21	6	25	5	.....	.....	36	.....	.....
October	22	12	10	6	9	3	.....	4	22	.....	.....
Total	110	53	57	30	58	14	1	7	107	3	.....

Of the seven adult cases reported, all were definitely traced, showing that direct or indirect contact was the cause.

Diphtheria.

There were but thirteen cases reported. There was one death. This is the best record in five years.

Year.	Cases reported.	Deaths.
1913	19	2
1914	24	2
1915	25	2
1916	33	5
1917	13	1

Measles.

The number of measles cases was considerably less than last year, but greater than any other year.

Year.	Cases reported.	Deaths.
1913	144	0
1914	279	1
1915	8	0
1916	581	7
1917	338	3

Whooping Cough.

Cases of this disease show the greatest contrast with last year, as is shown below.

Year.	Cases reported.	Deaths.
1913	1	3
1914	0	1
1915	33	2
1916	196	17
1917	10	1

Erysipelas.

Below are the statistics of this disease during the last four years.

Year.	Cases reported.	Deaths.
1914	11	4
1915	5	0
1916	6	1
1917	13	1

Chickenpox.

Year.	Cases reported.	Deaths.
1914	3	0
1915	3	0
1916	16	0
1917	97	0

Rubella.

For the first time within the history of the records there were several cases of rubella this year.

Year.	Cases reported.	Deaths.
1917	181	0

Mumps.

Year.	Cases reported.	Deaths.
1914	3	0
1915	3	0
1916	16	0
1917	90	0

Pulmonary Tuberculosis.

There were 15 cases, with 12 deaths.

Year.	Cases reported.	Deaths.
1913	12	19
1914	17	11
1915	28	23
1916	19	18
1917	15	12

Typhoid Fever.

This is the most gratifying of all the reports. For the first time in fifteen years there were no deaths.

Year.	Cases reported.	Deaths.
1913	80	5
1914	35	5
1915	23	7
1916	18	2
1917	11	0

Poliomyelitis.

There were no cases of this disease reported and no deaths. Last year there were eleven cases reported and three deaths.

A general resumé of the Communicable Diseases reported follows:

Disease.	Cases reported.	Deaths.
Measles	338	3
Rubella	181	0
Mumps	90	0
Scarlet Fever	110	3
Whooping Cough	10	1
Chickenpox	97	0
Erysipelas	13	1
Typhoid Fever	11	0
Smallpox	2	0
Diphtheria	13	1
Tuberculosis	15	12
Total	880	21

MISS K. MUNROE, SCHOOL NURSE.

I beg to present herewith my report of the work done during the eight months of this year:

Month.	Inspections.	Calls.	Exclusions.
1917			
January	896	44	11
February	811	32	16
March	875	30	15
April	501	9	31
May	939	80	21
June	504	57	9
September	532	109	8
October	415	7	49
	5,473	368	160

Laboratory Report.

The following examinations were made:

Milk samples from dairymen for dirt and butter fat	245
Milk samples brought by householders	16
Samples of breast milk	24
Samples of cream	8
Smears examined for diphtheria	55
Specimens of sputum examined for bacillus tuberculosis	49
Sundry examinations	19

A detailed report of this work follows:

Name of Vendor.	No. of Tests.	Clean.	Slightly Dirty.	Dirty.	Fat Average.
Brown Bros.	18	15	2	1	3.46
City Dairy	22	16	2	4	3.20
H. Crabtree	19	19	.....	.....	3.45
J. A. Kellough	23	17	6	.....	3.36
R. Lewtas	12	6	3	3	3.45
Marsutti	9	8	1	.....	3.90
F. McCarthy	21	17	3	1	3.41
Ed. Otway	17	16	1	.....	3.40
Jno. Otway	11	10	1	.....	3.33
Jas. Otway	22	19	2	1	3.47
J. A. Parker	2	1	.....	1	3.70
A. Rasilanen	1	.....	1	.....	3.60
F. Scollie	25	9	9	7	3.28
D. R. Thompson	22	17	5	.....	3.37
B. Webster	16	13	2	1	3.34
F. Widnall	5	4	1	.....	3.44

You will note that, of the 245 samples examined, 39 were somewhat dirty and that 19 were dirty, and of these 19 that were dirty, over one-half, or 11, were from Scollie's and the City Dairy, which sell country milk. Seven of the dirty samples were from Scollie's and four from the City Dairy. If we leave out of account R. Lewtas, who has now gone out of business here, and who had three dirty samples, we have but four dirty samples for all the other vendors. This is a good showing for the dairies, but the constant sale of dirty milk produced in the country must cease. During the next year this will be closely watched, and should its sale continue, I will apply to your Board for cancellation of licenses of the vendors.

For the present vendors, the fat average is 3.37, which is fair only. For all the vendors of the year—that is, including those who have gone out of business it is 3.44.

Of the swabs examined for diphtheria, 46 were for diagnostic purposes and nine were for release. Of the former, six were positive and forty negative, and of the latter one only was positive.

Of the examination of sputum for bacillus tuberculosis, eight were positive and forty-one were negative.

Medical Relief.

The following is the report of medical relief work for the year:

Month.	Visits Made.	Office Consultations.	Anæsthetics Administered.
1916			
November	5	1	
December	6	.....	2
1917			
January	6	1	
February	9	6	
March	8	2	
April	6	4	
May	4	1	
June	.....	1	
July	3	2	
August	.....	2	
September	2	2	
October	6	2	
	55	24	2

In addition to this, some laboratory work was done on this account.

S. Macnamara, Plumbing Inspector.

I beg to report the issue of ninety-two (92) plumbing permits for the year ending October 31st, 1917. Sixty-four (64) represented new installations, and twenty-eight (28) alterations and additions. Four hundred and eleven (411) calls of inspection were made. Thirty-two (32) old premises in which sanitary connections were not installed were connected to the sewer. This number included those installed by the City.

H. Paddington, Cleansing Superintendent.

I beg to present my report for the year ending October 31st, 1917:

Garbage Collection and Disposal.

As mentioned in my report of 1916, the collection and disposal of garbage by contract system was raised during the early part of this year, and under the assumption that the work could be done cheaper under a contract system, the Board of Works Committee called for tenders for garbage collection and disposal. The contract was awarded to the Cleansing Department, owing to the fact that the difference in the prices of the tender sent in by the department and other tenders was so small that it did not warrant changing the present system of municipal operation. The work generally has been carried out in a satisfactory manner, the one drawback being the lack of proper receptacles in some sections, although conditions in this respect are improving each year.

Nightsoil Collection and Disposal.

The collection and disposal of nightsoil has been carried out during the past year by contract. We were fortunate insomuch as the successful tenderer was the man who had been employed by the city on this work for several years past, the result being that the work has been carried out with entire satisfaction. An important change has been made during the past summer in the method of disposal, by dumping into sewer manholes instead of burying at the nuisance ground as done heretofore. The method of dumping into sewers has twice previously been tested in this city, but owing to the unsuitable wagons and flushing installations the tests were not satisfactory.

After careful consideration and a conviction that the method of dumping nightsoil into sewers was both natural and practical, two special nightsoil wagons were designed and built by the Cleansing Department, which, together with an improved flushing installation, enabled us to successfully use the sewers for disposal. Considering that the nuisance ground is now free from use for this work during the summer months, and that the length of haul to disposal site is greatly reduced, the present method is both a sanitary and economical improvement. The number of sanitary connections made was thirty-two, being the same number as in 1916, whilst four houses have been added to the collection, as against five in 1917. Three sanitary connections reduce the number of privies on sewered streets from 626 to 596.

F. K. Fisher, Visiting Health Nurse.

I beg to submit herewith my report of the work done during the months of May to October, during which time I was on your staff.

Month.	No. of visits.	New babes visited.	Breast fed.	Mod. milk.	Cond. milk.	Patent foods.
May	492	135	81	42	7	5
June	482	82	69	10	.....	3
July	461	60	57	3	.....	.....
August	447	47	42	5	.....	.....
September	483	72	64	6	2	.....
October	391	62	60	2	.....	.....
	2,756	458	373	68	9	8

The total number of visits made was two thousand seven hundred and fifty-six. The total cost of the work was as follows:

Salary of nurse	$450 00
Car tickets	13 00
Total	$463 00

This makes a rate of 16.88 cents per visit.

As you know, this is the fourth summer that I have been engaged in this work. I notice that each year there is a distinct improvement in conditions.

Some of the visits listed above were made to houses in which infants had died in previous years. I visited the house investigating conditions after each death had been reported, in cases where I had not been before to see the infant. In this way one can endeavor to counteract any influence that may have been working against the infant and educate for the future.

M. E. Duncan, Superintendent Isolation Hospital.

I beg to present my report as nursing superintendent of the Isolation Hospital for the year ending October 31st, 1917.

During the year, sixty-three patients were admitted, which with the five still in from last year made a total of sixty-eight patients nursed.

Those admitted were as follows:

Scarlet Fever	47 patients
Measles	10 "
Diphtheria	3 "
Smallpox	2 "
Rubella	1 "

The number of hospital days was 1,913.

The following operations were performed:

Tympanectomy	10 cases.
Adenectomy	1 "
Mastoidectomy	3 "

There were three deaths from scarlet fever.

Accounts.

Maintenance Account	$1,670 00
Salary of Superintendent	937 50
Salary of Caretaker	505 00
Salary of Laundress	120 00
Total expense	$3,232 50
Credits:	
Collection of accounts	$207 50
Net cash	$3,025 00

Number of hospital days, 1,913.

Cost per patient per day, $1.69.

BIRTHS REGISTERED IN THE CITY OF FORT WILLIAM.

For the year ending October 31st, 1917.

——	Males.	Females.	Total.	Twins.	Triplets.
1916					
November	28	35	63		
December	30	44	74		
1917					
January	35	27	62	2	
February	26	29	55		
March	29	34	63		
April	35	41	76	1	
May	33	37	70	2	
June	35	40	75	2	
July	15	28	43		
August	30	30	60		
September	31	28	59		
October	24	18	42	2	
	351	391	742	9	

STILL BIRTHS.

——	Male.	Female.	Total.
1916			
November			
December			
1917			
January			
February	1	1	2
March	1		1
April	1	3	4
May		1	1
June		1	1
July	1		1
August	3		3
September			
October	3	1	4
	10	7	17

W. E. STANLEY, SANITARY INSPECTOR.

I beg to submit herewith my annual report for the year ending October 31st, 1917.

Nuisances.

During the year the city has been under constant supervision for the detection and abatement of nuisances. The greatest we have arises from the privies. We have been somewhat tolerant in the matter, in the hope that we should be able to connect the houses with the water carriage system. However, financial difficulties intervened, and very little has been done in this direction. There appears, too, little chance of improvement and I have therefore begun to tackle this problem, and in connection with this matter notices have been served to place the privies in a sanitary condition. As there are over 1,600 privies in existence, all more or less in a dilapidated condition, it will take considerable time, which will not be lessened by the fact that most of the owners are illiterate foreigners who do not or will not understand the written notices.

The manure disposal has been fairly satisfactory, with the exception of the dairies, and all boxes are in a fair condition.

The storage of garbage before collection is far from being what it should be, owing to the lack of suitable receptacles. Until the city provides the receptacles, I cannot see much chance of improvement.

Another prolific source of nuisance is the keeping of cows and hogs, particularly in the coal docks section. I have twice made a house-to-house inspection of the district and ordered the removal of all hogs. In the case of cows, we have permitted persons to keep one, and ordered the removal of all above that number. A considerable reduction in the number of cows kept was made. However, it is all about labor in vain; as soon as you finish at one end you may commence at the other end again; they resume as soon as your back is turned.

With regard to this matter in the case of new houses and stables, it would save much time and trouble to the Health Department if the regulations were insisted upon at the time of building, and no house or stable should be certified as fit for occupation until this is done.

Fifteen hundred and sixteen inspections were made in connection with nuisances.

Five police-court prosecutions were instituted during the year.

Sewer Connections.

In this connection one hundred and eight inspections were made, and thirty-five notices served, but, as previously mentioned, work was stopped. It is to be regretted that this work is not pushed. The conditions prevailing are such as not only to be a serious menace to health, but disgusting to the sight. The number of installations made appears in the Plumbing Inspector's report.

Dairies and Cowbarns.

All dairies and cowbarns have been kept under constant supervision. Sanitary conditions have on the whole been good, athough not up to the mark required by the Provincial Medical Officer of Health. It will be my endeavor during the coming year to have these premises which come under the displeasure of the Provincial Medical Officer of Health improved without undue hardships on the owners. If it is possible to get milk clean and of a good quality under the present conditions of expensive feeding stuffs, I think it would be mistaken policy to push good men unduly and probably drive them out of business, more especially as the supply of milk is likely to be much diminished. However, there is an isolated case or two where conditions must be improved. The number of dairymen has decreased by six compared with last year, and in all probability the number will further decrease. Another pasteurizing plant has been installed during the year, making three in all. I do not attach much importance to this method of dealing with the milk in this district, as pasteurizing is only carried on during the summer months as a commercial proposition, consideration from a health point of view taking second place.

The disposal of manure is still a vexed question, and in several cases prosecutions have been taken, but there is little improvement. There is no doubt that the only way to deal with the matter is to insist upon it being removed and not turned into the river in a crude or diluted condition.

During the year I took two hundred and fifty-one samples of milk for testing.

There is still a good deal of illicit sale of milk in the north end of the city. This is a difficult matter to deal with, but by constant vigilance I have been able to diminish the practice a good deal, and the number of cows kept is not nearly so many as last year. Eight prosecutions were taken out in this connection. Three were for dirty milk and one for low fat percentage. Seven hundred and eleven inspections were made of cowbarns and dairies.

Infectious Diseases.

During the first seven months of the year measles was very prevalent, which took up a good deal of time placarding houses. With its subsidence my work relating thereto is about nil.

I made four hundred and thirty-two visits to infected houses.

Restaurants.

There has been a reduction in the number of restaurants. They are kept under constant supervision and are usually well conducted and kept in a satisfactory sanitary condition.

I prosecuted the proprietor of one restaurant for slaughtering sheep in the basement. He was fined $5.00.

Stores and Food Supplies.

All the stores dealing with food-stuffs have been regularly inspected and as a rule kept in a cleanly manner. It is a rare thing to receive a complaint. Of bad or unwholesome food, I have had occasion to condemn but a few lots of frozen potatoes.

I have weighed bread frequently, which is well up to standard weight. One baker from Port Arthur was prosecuted for light-weight bread and fined $5.00.

Seven hundred and forty-six inspections were made of the fruit and candy stores, bakeries and restaurants.

SUMMARY OF INSPECTIONS.

Bakeries.	Butcher Stores and Abattoir.	Dairies.	Candy and Fruit Stores.	Nuisances.	Communicable Diseases.	Sewer Connections.	Total.
291	1,379	711	455	1,516	432	108	4,892

Abattoir and Butcher Stores.

During the year the abattoir has been in constant operation. Owing to the severe winter, work was somewhat interfered with from January to April by the sewer being frozen.

It is worthy of notice that few cattle infected with tubercular diseases have been brought in for slaughter, and it has not been found necessary to condemn any on these grounds. Three head, however, were condemned which had died in transit. These were destroyed. Three stores have been opened at the market for the sale of fresh meats. This has been a great boon to the public, who have been enabled to get local killed fresh meat at less cost than storage meat. So great has been the success of this venture that the proprietors are opening stores in the city for the winter months.

The public are beginning to realize the advantage of fresh killed meat.

With the addition of a hide store, better facilities for the storage of offal, cement floor and other improvements which have been ordered, the abattoir will be in a much better condition of sanitation, which I hope will meet with the approval of the Provincial authorities.

SUMMARY

Date.	Cattle.	Calves.	Hogs.	Sheep.	Total.	Revenue.	Expenses.
1916							
November	67	34	16	12	129	$85 80	$69 45
December	78	14	2	.....	94	82 50	57 00
1917							
January	39	16	.....	.....	55	43 00	60 25
February	34	6	2	.....	42	36 50	82 39
March	27	20	1	.....	48	32 00	53 90
April	24	17	2	.....	43	30 25	45 00
May	32	47	50	.....	129	57 00	79 00
June	44	34	6	.....	84	55 50	56 55
July	62	47	7	.....	116	77 75	71 35
August	62	40	12	.....	114	78 50	87 15
September	76	43	5	.....	124	89 25	63 79
October	98	44	9	.....	151	114 50	77 84
	643	362	112	12	1,129	$782 55	$803 67
				Credits:			
				Overpaid Account		15 25	
				Expenses:			
				Debit balance		5 87	
						$803 67	$803 67

Communicable Diseases.

November, 1916—October, 1917.

Name of Disease.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Total.
Measles—													
Cases	84	40	25	40	34	29	48	30	7	1			338
Deaths		1		1									2
Whooping Cough—													
Cases			2	1			2				1	4	10
Deaths			1										1
Chickenpox—													
Cases	2	7	12	6	4	6	33	12	12	2	1		97
Deaths													
Mumps—													
Cases	14	14	4		2	3	15	27	4		2	5	90
Deaths													
Tuberculosis—													
Cases	4		1	1	3	2	1		1	1		1	15
Deaths	2		1		1	1	2	3	2		1		13
Scarlet Fever—													
Cases		3	4	1	4	3	6	5	10	16	36	22	110
Deaths				1		1			1				3
Diphtheria—													
Cases			2		2	1	2			1		5	13
Deaths					1								1
Smallpox—													
Cases					1	1							2
Deaths													
Typhoid Fever—													
Cases		1	2	1	1			1	1	1	1	2	11
Deaths													
Erysipelas—													
Cases	1			3	4	1		2			1	1	13
Deaths													
Poliomyelitis—													
Cases													
Deaths													
Rubella—													
Cases			2	41	48	33	47	6	4				181
Deaths													

Cause of Mortality.

Infants under One Year.

Number on International List.		
151	Congenital Debility, etc.	40
104	Enteritis and Diarrhœa	28
91	Bronchopneumonia	5
92	Lobar Pneumonia	5
150	Congenital malformations	4
61	Meningitis	3
103	Diseases of the stomach	3
10	Influenza	2
76	Diseases of the ears	2
79	Organic diseases of the heart	2
6	Measles	1
8	Whooping Cough	1
28	Tuberculosis of the lungs	1
74	Diseases of the nervous system	1
189	Ill-defined	1
	Total	99

DEATHS.

Number on International List.		
151	Congenital debility, etc.	40
104	Diarrhœa and enteritis (under two years)	32
79	Organic diseases of the heart	14
92	Lobar pneumonia	14
28	Tuberculosis of the lungs	13
152	Other diseases of early infancy	8
91	Broncho-pneumonia	7
154	Senility	6
150	Congenital malformation	4
76	Diseases of the ears	4
61	Meningitis	4
41	Cancer of the Peritoneum, etc.	4
7	Scarlet fever	3
10	Influenza	3
66	Paralysis without specified cause	3
103	Other diseases of the stomach	3
120	Bright's disease	3
175	Traumatism by other crushing	3
189	Ill-defined	3
186	Other external causes	2
185	Fractures	2
174	Traumatism by machines	2
169	Accidental drowning	2
146	Diseases of the bones	2
119	Acute nephritis	2
117	Simple peritonitis	2
113	Cirrhosis of the liver	2
108	Appendicitis	2
46	Other tumors	2
82	Embolism and thrombosis	2
71	Convulsions of infants	2
64	Cerebral hemorrhage	2
50	Diabetes mellitus	2
40	Cancer of the stomach	2
30	Tuberculous meningitis	2
20	Septicemia	2
6	Measles	2
8	Whooping cough	1
9	Diphtheria	1
31	Abdominal tuberculosis	1
39	Cancer of the buccal cavity	1
43	Cancer of the breast	1
45	Cancer of the larynx	1
47	Acute articular rheumatism	1
54	Anæmia	1
69	Epilepsy	1
74	Other diseases of the nervous system	1
78	Acute endocarditis	1
81	Diseases of the arteries	1
84	Diseases of the lymphatic system	1
93	Pleurisy	1
105	Enteritis and diarrhœa (over two years)	1
110	Other diseases of the intestines	1
114	Biliary calculi	1
118	Other diseases of the digestive system	1
132	Salpingitis	1
167	Burns	1
172	Traumatism by fall	1

GENERAL EXPENSE ACCOUNT DEPARTMENT OF HEALTH.

Salary of Medical Officer of Health		$2,108 96
Salary of Sanitary Inspector		1,475 00
Salary of Superintendent of Isolation Hospital		937 50
Salary of Stenographer		490 00
Salary of Janitor at Isolation Hospital		505 00
Salary of Laundress at Isolation Hospital		120 00
Salary of Visiting Health Nurse		450 00
Maintenance of Isolation Hospital		1,670 00
Livery and carfare		100 00
Printing and stationery		74 52
Office and laboratory equipment		15 73
Disinfectants and antitoxin		49 86
Auto service		688 99
Conventions		100 00
Ambulance		9 00
Incidentals		85 01
Abattoir		803 67
		$9,683 24
Credits:		
Revenue from Abattoir	$782 55	
Isolation collections	207 50	
Police Court fines	97 00	
Milk licenses	16 00	
Overpaid Abattoir account	15 25	
Sundries	7 95	
		1,126 25
Total net cost of Department		$8,556 99
Total per capita cost		47.53 cents.

GALT.

To the Chairman and Members of the Board of Health, Galt, Ontario.

GENTLEMEN,—In accordance with the provisions of the Ontario Public Health Act I beg herewith to submit my report for the year ending October 31st, 1917.

The great outstanding feature of this report is the fact that it shows comparatively few cases of typhoid fever as compared with other municipalities of the same size, due no doubt to the excellent water which is provided by the Water Commission and to the careful supervision of the milk supply and other sources of contamination. Yet with all our care in regard to the milk supplied to our citizens, I am not altogether satisfied with its cleanliness, believing, as I do, that it is possible to supply clean, wholesome milk free, in a great measure, from contamination, and I can assure you, gentlemen, that it is not my intention to lessen my energies along this line until the object we have in view has been accomplished, namely, the assurance to our citizens that they are being supplied with clean, wholesome, and nutritious milk up to the standard of the by-law provided by the city regarding butter fat.

During the year we have had a great deal of trouble keeping the privies clean and up to the mark from a sanitary point of view due, in a great measure, to the large number of pits, poorly constructed boxes, and to the inefficient method of keeping them clean. Hereafter we do not expect to have any more trouble with regard to the pits, as I have ordered them to be filled up and to substitute therefor dry earth closets under authority vested in me, as Medical Health Officer, by sub-section 14 of section 15, Schedule B. On the other hand, I do not expect very much improvement in the method of keeping them clean until the council can see its way clear to pass a by-law making the landlords primarily responsible for keeping them clean, and to charge the cost of cleaning these boxes against the various properties, as is done in connection with the garbage system.

Regarding tuberculosis, I regret that the local medical gentlemen have not as yet complied with the regulations laid down by the Provincial Board of Health with regard to reporting cases of tuberculosis, which regulation says that wherever any legally qualified medical practitioner knows that any person whom he is called upon to visit is affected with tuberculosis he shall, within twelve hours, give notice thereof on the prescribed form to the Medical Health Officer of the municipality in which such diseased person resides.

During the months of June, July, August and September there have been reported personally about two hundred cases of whooping-cough, and I verily believe as many more not reported. You will observe, Mr. Chairman, that under the Act it is compulsory that a report should be made to the Medical Officer of Health either by the physician or a member of the family, but I suppose education is the only method by which we can reach the people and prevent this useless waste of human life from whooping cough and its complications, and to my mind the only method of education that will reach the home is to employ a visiting health nurse to visit these homes. Statistics verify the fact that, with few exceptions, all deaths from whooping cough are children under the age of two years. Therefore I know no better method of cutting down this infantile mortality than by the employment of a permanent visiting house nurse.

Notwithstanding the very primitive and unsanitary condition of the Swiss Cottage there were treated during the year in the said cottage eighty cases of measles, seventy-nine of mumps, ten of diphtheria, ten of diphtheria suspects, four of scarlet fever, and five of erysipelas, without a single death or a case of cross infection. Before leaving the subject of the number of cases treated in the Swiss Cottage, I consider that it would be unfair and unjust to the city of Galt to permit this report to go abroad without explaining the source from which these contagious diseases arose. No doubt this Board and the citizens generally know that these diseases were brought in by the 122nd Battalion, and the soldiers represented ninety per cent. of all the cases treated in the Cottage.

INFANTILE MORTALITY.

You will observe, Mr. Chairman, by the statistics given below that twenty-five per cent. of all the deaths in the city were from children under one year old and do you not think that the time is opportune for the medical profession and the public generally to investigate this question of infant mortality and see if some means could not be devised of saving this little squad of human beings.

Vital statistics show as follows:—

Deaths, including non-residents—187.
By this non-residents mean residents of other municipalities who died and whose deaths are registered in Galt.
Deaths, excluding non-residents—172.
Population—12,465.
Death rate per 1,000 (including non-residents)—15.
Death rate per 1,000 (excluding non-residents)—13.79.
Births—266.
Birth rate per 1,000—21.34.
Infant mortality in Galt—49.
Infant mortality per 1,000—3.93.

	Reported.	Deaths.
Typhoid fever	3	0
Chickenpox	10	0
Smallpox	0	0
Pulmonary tuberculosis	0	7
Poliomyelitis	0	0
Scarlet fever	5	0
Diphtheria	11	1
Measles	105	0
Whooping cough	200	3
Mumps	79	0
Erysipelas	5	0

In conclusion I may say that the relationship between the School Board Nurse and the Board has been greatly improved by the consultation between the Public School Board and your Medical Officer of Health, and whilst the relationship between these Boards has been improved I could not conclude my report without saying that the support and assistance I have received from the local Board of Health, both individually and collectively, have been all that could be desired, and that the duties involving upon the secretary and inspector have been thoroughly, impartially, and conscientiously performed.

Respectfully submitted.

J. H. RADFORD.
Medical Officer of Health.

GALT, December 4th, 1917.

To the Members of the Galt Board of Health.

GENTLEMEN.—The Chairman of the Galt Board of Health, reviewing the work of the passing year, respectfully submits the following report:—

The interesting report of your M.O.H. is eminently satisfactory. The decrease in the number of typhoid fever cases indicates a supply of pure water and wholesome milk.

The regular monthly milk tests are showing good results, not only in cleanliness, but also in the percentage of butter fat. These results have been obtained in a friendly and harmonious manner, the milk vendors at all times showing a willingness to co-operate with this board in improving the quality of their product.

The City Council, in appointing Mr. Chas. Oughton, sanitary inspector, made a wise selection. I regret we could not retain Mr. Oughton's services, as he has proved a courteous and efficient officer.

The appointment of Mr. Clunie to the position of Sanitary Inspector will, I trust, be satisfactory to you.

The Swiss Cottage was taxed to its capacity during the early months of this year owing to an epidemic of measles originating among the soldiers comprising the 122nd Battalion, stationed here during the winter of 1916-1917.

The successful treatment of these patients, along with other infectious diseases, shows wise management and efficient administration and must be gratifying to the members of the board.

A resolution, adopted by you, favoring a systematic plan *re* sewer connections to be applied to certain streets, designated by this board, as necessary to the public health of the city, is now in operation, a commencement having been made with Main Street.

The arrangements for the Child Welfare Exhibit under the auspices of the local board was successfully carried out. We appreciate the interest manifested and the assistance rendered by those who co-operated with us. The giving of prizes to the best developed and healthful children stimulated interest, and can not fail of good results.

When we consider that one child in ten dies under two years of age, it is time to ask the question: What are we doing? It is a vital question, and if by spending a few hundred dollars we can save the little ones, we should not hesitate.

In closing I wish to thank you gentlemen for the courtesy and co-operation accorded me during the year.

Respectfully yours,

JOHN H. LAIRD,
Chairman of the Board of Health.

GALT, ONTARIO, December 4th, 1917.

Dr. J. H. Radford, Medical Officer of Health, Galt, Ont.

DEAR SIR,—Please find appended certified list of deaths which occurred in the city of Galt from December 1st, 1916, to December 1st, 1917.

Yours truly,

JOSEPH MCCARTNEY,
Division Registrar,

Cellulitis	1	Appendicitis	2
Tetany	1	Artheronia of arteries	1
Old age	14	Cerebral hemorrhage	3
Pneumonia	18	Heart disease	2
Arteriosclerosis	3	Septic poisoning	2
Premature	7	Diphtheria	1
Hemorrhage of bowel	1	Paralysis agitans	1
Tumor of brain	1	Cancer of mouth	1
Otitis	1	Paralysis	2
Bright's disease	3	Heart lesion	1
Obstruction of bowels	2	Influenza	1
Apoplexy	8	Burned to death	4
Cystitis	1	Septic peritonitis	1
Injury to base of skull	1	Rheumatic endocarditis	1
Tuberculosis	2	Myocarditis	1
Accident (fell down stairs)	1	Inflammation of bladder	1
Cancer of stomach	2	Solpigitis and cystic ovaries	1
Still born	11	Congestion of lungs	3
Heart failure	4	Nephritis	2
Spinal carriers	1	Gas poisoning	1
Arteriosclerosis and clephritis	1	Whooping cough	2
Peritonitis	2	Carcinoma of liver	2
Rheumatism	1	Aortic stenosis	1
Pleurisy and disease of liver	1	Ulcer of stomach	1
Cancer	4	Uræmic convulsion	1
Cancer of bowel	1	Dropsy	1
Cholera infantum	1	Infected bladder	1
Stroke	2	Uterine fibroid	1
Pernicious anæmia	5	Septicæmia	2
Carcinoma of stomach	1	Marasmus	1
Cancer of liver	3	Chronic bronchitis	4
Mitral incompetence	2	Carcinoma	4
Broncho-pneumonia and Whooping-cough	1	Convulsions	3
		Consumption	1

Intestinal perforation	1	Bulbar paralysis	1
Tuberculosis of lungs	1	Railway accident	3
Cerebral meningitis	1	Diabetes	1
Choked by milk in tracheal	1	Ovarian cyst	1
Fibroid phthisis	1	Allulitis	1
Lympho-sarcoma of mediastin	1	Gastric ulcers	1
Pulmonary tuberculosis	1	Otitis oedera	1
Inanition	2	Congestion of liver	1
Gangrene	1	Septic meningitis	1
Eclampsia	1	Injury at birth	1
Pzloricstenosis	1	Acute phthisis	1
Phthysis pulmonalis	1		191

Certified,

JOSEPH MCCARTNEY.

Division Registrar.

HAMILTON.

JAMES ROBERTS, M.O.H.

Please find submitted report of Medical Officer of Health for statistical year beginning November 1st, 1916, and ending October 31st, 1917.

The activities of the Department in the different branches of public health work have been outlined as briefly and concisely as possible in the various reports.

The vital statistics and statistics of communicable diseases will be found in their respective tables.

At the inaugural meeting of the Board of Health for 1917, I was asked to make a short report, setting forth the requirements of the Department for the ensuing year, with the object of increasing its usefulness. The report, which in part follows, was filed for discussion at a future date.

In compliance with your request for some suggestions with a view to increasing the efficiency of the Department, it is hardly necessary to remind you of the fact that during the twelve years that I have been executive officer of the Board, the growth of the city has been phenomenal, the amount of work done increased manifold, and the whole complexion and character of the service changed, with the object of making it, wherever possible, auxiliary to the prevention of disease.

The one time conception of a Board of Health as a body of smell chasers and scientific bill posters, has, in all progressive communities at least, died and been buried forever. "The present conception of a modern health department is a body of highly trained people, who really know all about diseases they exist to prevent; who really know how to prevent them; and who really have the necessary facilities to really accomplish prevention."

Most health departments, in cities of any considerable population, are now employing nurses to visit cases of communicable disease. If trained in the work, these know how to instruct, how to give nursing assistance where necessary and to see that isolation and disinfection are properly carried out. The visiting nurse is one of the chief factors, if not the chief factor in the prevention of tuberculosis, and in addition to the one which the Health Association have asked us to provide, we might profitably, this year, employ at least one other well qualified nurse for such work as I have outlined, for housing work, child welfare work, sanitary instruction and social work. We were one of the first health boards in Canada to advocate the woman health visitor as a departure in public health service, but, because of the fact that the salary paid was insufficient to procure the properly trained nurse our efforts were discontinued.

In 1910 the Public Health Administration in Toronto employed one nurse. In 1914 there were forty-four, with a supervising nurse in charge of each of five districts. The Health Officer says: "They follow the cases to the home, study the social conditions in the homes, ascertain if there are others in the home requiring medical care; educate the

mother on home sanitation, the care of babies, the dangers of infection, the value of fresh air and sunshine. If a social problem is found, and there usually is, it is referred for its solution to the Neighborhood Workers or some other social agency."

In addition to supervising sanitary work, the Food Inspector in 1916 made 4,504 inspections of markets, restaurants, butcher shops, abattoirs, bakeries, hotel kitchens, fruit stores, dairies, dairy farms, cold storage plants, ice cream plants, candy factories, food peddlers' premises, etc.; 327 visits were made to milk dairies in the city. Nearly 1,300 samples were tested for adulteration, lack of cleanliness in milking, and for other reasons. Over 500 inspections were made of bake shops and an equal number in regard to butcher shops and restaurant kitchens, while hundreds of inspections were made of other places where all manner of foods are kept, stored or exposed for sale.

I have, on more than one occasion, pointed out that the supervision of our food supplies is quite sufficient to occupy the entire time of the inspector and assistant. With our present staff this is impossible. Both inspectors have at times to be utilized in the supervision of outbreaks of contagious diseases. The appointment of a trained sanitary inspector, at a sufficient salary to obtain a fully competent man, who would take charge of all sanitary matters and quarantine, under the direction of the Health Officer, would be a valuable assistance to the department. I would further recommend that as the requirements of the department demand, the appointment of sanitary inspectors should be made entirely with regard to qualification, and the best man possible obtained for the salary paid.

The assistance given to the department by the director of the laboratory, during the past year, has been of substantial benefit in helping us to get prompt and accurate reports of contagious cases, and in enabling the officials to secure isolation and quarantine as quickly as possible of persons liable to disseminate infection, whether in the school or in the home. The work of the laboratory should be extended in order to provide a minimum bacterial count for summer and winter of our milk supply. As yet no public health chemistry has been undertaken.

Medical inspection of schools is at the present time under the Board of Education. For reasons that will be obvious on reflection, this is a mistake. Health departments should be held responsible for conditions affecting the health of all citizens from childhood to old age. A very large part of medical inspection of schools has to do with the eradication of communicable diseases and the inspectors, deprived of the mandate of the Public Health Act, lose much of their authority in following the cases to the home. Division of responsibility is not good from an administrative or economic standpoint, and is not productive of efficiency.

One of the pressing needs of the department is adequate accommodation for minor contagious diseases. The city isolation hospital is adapted to receive and care for diphtheria and scarlet fever cases only. There is no regular accommodation for mixed cases, measles, chickenpox, whooping cough, etc. Cases of these occuring in hotels, boarding houses and public institutions, cause much trouble often, and unreasonable expense in providing for their isolation. For some time past, through the courtesy of the hospital authorities, two houses, originally intended as nurses' quarters, have been utilized in emergency. These, however, are scarcely more than sufficient to accommodate the cases which inevitably arise among the hospital population and require to be taken care of forthwith.

As shown by the monthly reports already submitted, the dental clinics of the Board —one of the most profitable investments from a public health viewpoint ever undertaken by the city, and one which will be a blessing to the rising generation—are doing excellent work. Others should be established in the north and south sections of the city as soon as the finances of the Board will permit.

The above are some of the matters which deserve consideration, if Hamilton is to hold a place among progressive cities in carrying out effective health work. With small appropriations and little trained assistance we have been able to accomplish something in the past. Typhoid fever has been called by a prominent sanitarian "the index of what a health board has been doing." In the first year in which I had charge of the health administration, the death rate from typhoid was 16.67 per 100,000 of population. Last year it was 3, as low as that of the healthiest cities in the world. There are monuments to our housing activities in every section of the city. Our sanitary inspections have increased from 4,500 in my first year of office to 25,000 per annum.

Many years ago, John Ruskin said: "Any interference which tends to reform and protect the health of the masses is viewed by them as an unwarrantable interference with their vested rights in inevitable disease and death."

Dr. Chapin, of Providence, well points out that "the education of the individual has become a most important duty. The consumptive must be taught such habits of life that he may have a fighting chance. He and his family must be taught the modes of infection and how to combat them. Parents must be taught that earache, due to adenoids, may result in permanent deafness. Much of the campaign carried on by the health department encroaches on what has been considered the domain of the practising physician, as advice to the mother on the care of infants, the directions to the consumptive, vaccination, injection of antitoxin, the examination of the eyes of school children. But these are the things that count."

It is gradually being realized that to prevent deaths from scarlet fever, measles and tuberculosis is just as important as to prevent drowning and railway accidents.

In my opinion the individual who stands aghast at the Belgian atrocities, or the sinking of hospital ships, and yet fails to be moved by the sorrow and tears that year after year are needlessly shed at the shrine of the demon of diphtheria, is touched with moral hypocrisy.

Hamilton, with its superior natural advantages, is one of the healthy cities of the continent. The aim of the Board of Health should be to have it at least the healthiest city in Canada.

The task of the Health Officer, is at best, a thankless one, but if the adverse criticism levelled at him by those whom he will not permit to endanger the lives of their neighbors, finds an ever listening ear in official circles, and if in addition he is subjected to the petty intrigue and petty vindictiveness of the narrow minded and illiterate, and at the same time receives no real encouragement from the better and more altruistic elements in the community, the evolution of the Health Department to a place of maximum usefulness I fear will be slow and painful.

Dental Clinics.

After ten years of continuous agitation, dental clinics, for the free treatment and care of school children's teeth, have been finally established in Hamilton.

The clinics have been installed under the management of the Local Board of Health, which body has received from the Municipal Council a stated appropriation for their upkeep,

The two already in existence are modern and fully equipped, one in the west end of the city in charge of Dr. W. G. Manning, the other in the east operated by Dr. H. A. Thompson.

The hours are from 9 to 12 a.m. and from 2 to 5 p.m. alternating daily, thus affording a half-day service. Record cards have been carefully prepared so that every treatment and operation performed during each child's attendance at clinic can be kept on file and referred to at any time.

Children presenting malocclusion and irregularities of the teeth are treated as far as possible at clinic, and then advised as to further treatment, as it is impossible to handle such orthodontia cases in these clinics.

Too much emphasis cannot be placed upon the necessity of early dental attention, and particularly the care of temporary teeth. When they are lost prematurely, the permanent teeth erupt into various conditions of irregularity, which greatly interfere with the growth of the bones of the head. There is also sometimes interference with the organs of respiration, resulting in a lack of normal development of the tissues of the body.

Within the last year countless teeth have been removed without justification through faulty advice being given to parents because of toothache in children. It seems to us that the rapidly growing custom of sacrficing teeth, many of which are merely suspected of being septic, cannot fail to arouse the most ardent activities of dentists against the practice. It would appear that an amazingly low estimate is being placed on the value of children's teeth by an increasing number of persons who should appreciate their importance.

The co-operation of the school nurses, school teachers and school authorities, and their valuable assistance have been greatly appreciated.

It is hoped that during the coming year funds will be forthcoming for the establishment of two additional clinics, as the present accommodation is altogether inadequate.

Following is a summary of the work completed during the year:

Total examinations	3,568
Total medicinal treatments	2,990
Total fillings	3,856
Total extractions	2,094
Miscellaneous operations	207
Completed cases	1,282
Uncompleted cases given new appointments, did not return	104

H. A. Thompson, D.D.S.
W. G. Manning, D.D.S.

Tuberculosis.

Report of Visiting Nurse.

In reviewing the work of the past years, at the down town dispensary of the sanatorium, one realizes that the nearest approach to efficiency in public health education is to be able to give directly to the persons interested, the information and help of which they stand in need.

The free dispensary for tuberculosis is one way of doing this, and there is need of close co-operation among doctors, nurses and all those interested in social service work, if we mean to accomplish anything in stamping out this dread disease.

During the year the visiting nurse's work was taken over by the Board of Health, and we feel that the change will be of inestimable value in this branch of social service.

Within the past eight months 1,077 persons have visited the dispensary and 958 examinations were made by the doctors in attendance; of these very few were found entirely free from tuberculous infection.

Of the new cases examined 136 were children under 12 years of age. In few cases was there any history given of tuberculosis in the homes, and one wonders if other peoples' carelessness outside the homes is not responsible for a great deal of infection among these little ones, viz.: spitting on the street and in the cars.

Five hundred and eight new patients have been added to our list. The different nationalities are as follows: Canadian, 277; English, 132; Scotch, 36; Irish, 9; American, 25; Rumanian, Russian, Italian, Austrian, Hungarian and Turks number 59.

There is need for the circulation of literature printed in the language of the foreigner before one can feel that much is being done towards his education. Home visiting is most unsatisfactory. Very rarely can the homekeeper understand anything in English. Usually the disease has become in an advanced stage before it is reported to a physician, and must, in the unsanitary surroundings in which some patients live, leave a great spread of infection in its wake.

Owing to the greater accommodation at the Sanatorium our waiting list is smaller than it has ever been, and advanced cases are transferred to that institution often as soon as home arrangements can be made. This will do much towards keeping tuberculosis in check, as our homes are now very much overcrowded, owing to increased rents and the general high cost of living.

One thousand one hundred and one visits were made to the homes. Some patients receive occasional visits after leaving the Sanatorium, just to keep in touch with them during the first year, while others are visited regularly. Each patient is kept in supplies, sputum boxes, handkerchiefs and medicine if necessary. Five hundred and eighty-one patients have been thus supplied.

Instruction is given as to the care of sputum, the importance of rest and proper nourishment, and advice as to cleanliness and ventilation.

The health of each member of the family is also noted.

Incipient cases are found in this way.

Old ideas regarding personal habits of life are not easily shaken. For instance, many people still have the illusion that night air is positively injurious, and insist that fresh air gives them colds. If they could but visit the preventorium of the Sanatorium, with an understanding mind, they could gain greatly in both health and happiness along this line.

The voluntary contribution has amounted to $17.15, and money from sale of thermometers amounts to $15.80. Part of this has been used for the upkeep of the dispensary.

Where people have been too poor to supply proper nourishment for their children, the Billikin Club has been a great help to these people in supplying milk, eggs and bread, where necessary. From ten to fourteen families have had help in this way through the year.

Eight hundred and fifty dollars has been drawn from Mr. Doolittle's fund and used in providing milk, oysters, and fruit for patients requiring these.

Food and Dairy Division.

Total number of inspections	4,504
Inspection of central market	188
" restaurant and lunch rooms	577
" bakeries	441
" grocery stores	162
" confectionery stores	189
" ice cream manufacturers	8
" butchers' shops	389
" fish markets	68
" sausage factories	6
" soft drink manufacturers	18
" fruit and vegetable houses	274
" slaughter houses	10
" *re* license for butcher shop	26
" candy factories	81
" fruit and vegetable pedlers' wagons	10
" *re* license for bakeries	7
" spice mills	2
" ice cream vendors' premises	18
" hide houses	7
" drug stores	12
" hotel kitchens	3
" poultry houses	14
" butter and egg stores	54
" *re* restaurant licenses	14
" barber shops	1
" city dairies	327
" dairy farms	22
" stores selling milk	6
" dairies *re* disease	1
" creameries	7
" ice cream cone factories	8
Number of sediment tests made	160
" bacterial counts made of milk	13
" milk samples collected and tested	1,287
" milk samples tested and found below city standard	50
" inspections of milk wagons	101
" inspections *re* selling milk without license	11
" inspections for milk license	38
" cream samples collected and tested	12
" milk licenses refused	5
No. times potatoes weighed	5
" times bread weighed	91
" times butter weighed	15
" inspections of cars *re* potatoes	5
" inspections *re* ice cream tents	10
" complaints investigated *re* food	24
" times attendance at court	24
" summons issued	26

Notices Were Served as Follows:

Notice to clean candy kitchen	4
" " bake shop	5
" " hide houses	1
" " milk dairies	9
" " milk wagons	9
" " grocery stores	2
" " restaurant	80
" " butcher shops	109
" " fruit and vegetable stores	5
" " confectionery stores	2
" " fish stores	2
" " cows	6
" " farmers' milk wagons	4
" " barnyard	5

Notice to clean milk bottles	3
" " ice box	5
" " candy factories	1
" *re* bad potatoes	1
" to take out milk license	22
" *re* butcher license	6
" to cover fruit	68
" *re* unsanitary premises	10
" to whitewash cow stable	17
" discontinue selling milk	7
" discontinue selling ice cream	5
" repair floors in dairies	3
" provide screens	15
" discontinue bread making	2
" remove beds from restaurant	2
" *re* ice cream test	1
" cream test	5
" milk test	59
" to discontinue using roller towels	2
" *re* butcher license	6

Seizures.

Lbs. of beef	4,012
Lbs. of pork	537
Lbs. of veal	325
Number of fowl	8
Lbs. butter	22
Loaves bread	838
Dozen eggs	40
Number gallons cream	8
Lbs. sugar	100
Baskets peaches	2
Baskets apples	10

Prosecutions, 1917.

	No.	Amount Fines suspended
For keeping unsanitary premises	1	
" adulterating milk	5	$165 00
" selling milk without license	2	30 00
" keeping unsanitary butcher shop	1	15 00
" keeping unsanitary restaurant and lunch room	2	25 00
" offering for sale light weight bread	5	25 00
" offering for sale light weight butter	4	30 00
" offering for sale faced apples	1	20 00
" offering for sale faced peaches	1	13 00
		$323 00

Report of Sanitary Inspectors.

To the Chairman and Members of the Local Board of Health.

Gentlemen,—

Below please find synopsis of work done by the sanitary inspectors from November 1st, 1916 to October 31st, 1917.

Total inspections	21,023
No. re-inspections	4,218
No. notices served	4,524
No. inspections *re* accumulation of rubbish and refuse	1,971
" " accumulation of manure	444
" " unsanitary and overcrowded premises	1,471
" " unsanitary and defective water closets	997
" " defective sewer connections	532
" " defective eave troughs	77
" " defective sink waste pipe	72
" " defective plumbing	48
" " defective roofing on houses	63
" " nuisance caused by fowl on premises	573

No. inspections *re* nuisance, animals on premises	121
" " offensive garbage utensils	229
" " offensive privy vaults and d. e. closets	275
" " offensive garbage dumps	18
" " unsanitary basements and cellars	440
" " disposal waste water	65
" " water on lots	239
" " census for sewer connections	126
" " house to house	1,630
" " vacant houses	538
" " supplying tenants with water	98
" " providing sanitary conveniences for workmen	12
" " smoke nuisance	9
" " offensive odors	66
" " cesspools	6
" " of premises found O.K.	3,182
" " laundries	461
" " schools	27
" " junk yards	14
" " street cars	145
" " stables	319
" " stables located	15
" " alleys	383
" " *re* ice houses	114
" " hotel and public lavatories	34
" " manure bins not covered	237
" of water closets installed	37
" complaints unfounded	19
" wrong numbers given, occupants not in	357
" miscellaneous calls	176
Visits *re* "dog biting cases"	21

Notices Were Served as Follows:

Notice to clean and repair premises	895
" clean cellars and basements	148
" clean alleys	243
" clean laundries	137
" clean stables	113
" clean chicken coops	36
" clean and repair water closets	257
" clean privy vaults and d. e. closets	59
" repair defective roofs	11
" repair defective sewer connections	129
" repair defective plumbing	37
" repair eave troughs	23
" remove rubbish and refuse	859
" remove accumulations of manure	206
" remove fowl from premises	65
" remove fowl required distance	68
" remove animals from premises	29
" provide proper water supply for tenants	30
" provide proper ventilation	6
" sanitary conveniences for workmen	10
" manure bins	15
" provide d. e. closets	3
" abolish privy vaults and d. e. closets and intall water closets	132
" abate nuisance caused by water on lots	46
" lock up fowl	163
" cover manure bin	117
" provide sewer, cement floor and manure bin in stable	39
" vacate stable	3
" vacate premises	15
" *re* offensive garbage utensils	224
" unsanitary and overcrowded premises	202
" disposal waste water	39
" water in cellar	2
" offensive dumps	12
" offensive odors	15
" offensive junk yards	5
" smoke nuisance	2

Number miscellaneous notices served	32

Summary of Work Done by the Inspectors in Quarantine and Disinfection.

Houses placarded for Scarlet Fever	17
" " " Diphtheria	43
" " " Measles	1,343
Houses disinfected for Scarlet Fever—patients sent to hospital	30
" " " Diphtheria—patients sent to hospital	176
" " " Poliomyelitis—patient sent to hospital	1
" " " Scarlet Fever—cards removed	20
" " " Diphtheria—cards removed	45
" " " Poliomyelitis	5
" " " Tuberculosis	55
" " " Erysipelas	13
" " " Meningitis	1
" " " Typhoid Fever	10
Clothing disinfected for Scarlet Fever	2
Measles cards removed	1,206
Visits *re* quarantine and isolation	1,683

CITY LABORATORIES.

Examinations for Diphtheria Bacilli.

Month.	Positive.	Negative.	Total.
1916			
November	129	552	681
December	69	395	464
1917			
January	84	394	478
February	57	348	405
March	49	334	383
April	20	226	246
May	28	305	333
June	63	329	392
July	21	225	246
August	16	383	399
September	9	164	173
October	18	258	276
Total	563	3,913	4,476

BACTERIOLOGICAL REPORT OF WATER.

Daily Average.

Month.	Tubes with gas.	Tubes without gas.	Count per C.C. 37°
1916			
November	.....	5	5
December	.....	5	6
1917			
January	2	5	6
February	2	4	6
March	1	5	5
April	2	4	5
May	.....	5	5
June	.....	5	5
July	1	5	7
August	.....	5	7
September	1	5	8
October	.....	5	6

Standard Methods.

Five ten cc. gas tubes and ÷10 plain agar—incubated at 37°c. Gas in two or more 10cc. amounts and count of over 100 per cc. shows water unsafe.

EXAMINATIONS OF BLOOD FOR WIDAL REACTION.

Month.	Positive.	Negative.	Total.
1916			
November	6	3	9
December	3	6	9
1917			
January	5	11	16
February	1	2	3
March	9	11	20
April	2	8	10
May	.....	6	6
June	4	7	11
July	3	15	18
August	4	20	24
September	2	12	14
October	.....	8	8
Total	39	109	148

*Includes examinations for points outside city.

EXAMINATIONS OF SPUTUM FOR TUBERCLE BACILLI.

Month.	Positive.	Negative.	Total.
1916			
November	4	33	37
December	6	38	44
1917			
January	2	62	64
February	12	41	53
March	6	49	55
April	3	35	38
May	3	43	46
June	6	25	31
July	3	28	31
August	5	16	21
September	6	24	30
October	3	28	31
Total	59	422	481

VITAL STATISTICS.

	1915.		1916.		1917.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
November	239	106	220	112	230	92
December	231	135	240	110	261	106
January	236	92	242	162	255	121
February	243	99	243	136	197	98
March	284	119	271	138	290	147
April	231	114	229	133	232	134
May	248	104	242	97	224	118
June	231	72	233	96	235	125
July	241	118	291	98	220	107
August	239	147	244	117	240	98
September	230	118	221	112	232	110
October	243	117	233	111	264	114
Total	2,896	1,341	2,909	1,422	2,880	1,370

COMPARATIVE TABLE.

Showing number of deaths during 1917, 1916 and 1915 within the following age periods.

	1917		1916		1915	
	Males.	Females.	Males.	Females.	Males.	Females.
Under 1 year	239	183	266	194	257	182
From 1 to 5 years	27	35	31	45	45	44
From 5 to 10 years	12	22	20	7	7	10
From 10 to 20 years	29	19	24	15	17	15
From 20 to 30 years	34	41	37	35	44	36
From 30 to 40 years	55	48	63	57	40	39
From 40 to 50 years	56	43	61	55	39	37
From 50 to 60 years	56	64	66	55	61	81
From 60 to 70 years	93	63	77	63	70	61
From 70 to 80 years	69	81	73	82	72	86
From 80 to 90 years	42	44	37	47	33	42
From 90 to 100 years	7	6	5	7	8	13
Ages not given	1	1	.....	.....	2	.....
	720	650	760	662	695	646

COMPARATIVE TABLE.

Showing Causes of Death in Early Infancy, Exclusive of Prematurity.

Under One Year.

	1917	1916	1915
Gastritis	3	7	11
Malnutrition	12	21	17
Inanition	21	16	28
Marasmus	35	26	20
Cholera Infantum	14	38	20
Intestinal Obstruction	3	6	2
Congenital Pyloric Obstruction	..	1	..
Gastro Enteritis	12	26	25

	1917	1916	1915
Enteritis	2	7	4
Ileo Colitis	1	3	4
Convulsions (Gastritis)	15	18	22
Stomatitis	1	..	2
Nephritis	1	5	3
Icterus Neonatorum	..	4	2
Congenital Heart	3	4	11
Spina Bifida	1	1	5
Omphalitis	..	..	1
Syphilis	2	5	3
Hydrocephalus	2	..	1
Asphyxia Neonatorum	1	..	..
Patent Foramen Ovale	6	3	3
Injury at Birth	4	..	..
Meningitis	6	6	6
Meningeal Haemorrhage	1	4	4
Pernicious Anaemia	1	..	..
Strangulated Hernia	..	1	..
Status Lymphaticus	..	1	..
Congenital Stenosis	..	1	..
Cellulitis	..	..	1
Carcinoma (Kidney)	..	1	..
Jaundice	..	1	..
Hemiplegia	..	..	1
Broncho Pneumonia	20	20	20
Bronchitis	7	4	6
Pneumonia	23	13	25
Lobar Pneumonia	..	1	..
Pleurisy	..	1	..
Pulmonary Oedema	..	1	..
Diphtheria	4	3	5
Measles	1	5	5
Tubercular Meningitis	1	1	1
Tuberculosis of the Intestines	2	..	..
Suffocation	3	..	2
Empyema	..	1	..
Erysipelas	1	7	..
Septicaemia	2	1	..
Heart Failure	7	..	..
Haemorrhage	9	..	..
Whooping Cough	3	1	5
Natural Causes	2	..	1
Cause not known	..	1	..
Accidental injuries	..	1	..
One to Two Years.			
Meningitis	1	4	1
Broncho Pneumonia	6	6	6
Pneumonia	8	8	6
Congenital Heart	..	1	..
Gastro Enteritis	1	4	6
Whooping Cough	1	4	2
Convulsions	5	5	1
Nephritis	..	..	1
Bronchitis	..	..	2
Marasmus	3	2	3
Intestinal Obstruction	..	..	2
Intestinal Infection	..	..	2
Cholera Infantum	3	2	2
Malnutrition	1	..	..
Cerebro Spinal Meningitis	..	..	1
Hydrocephalus	1	..	1
Rickets	1	..	..
Pharyngeal Abscess	..	1	..
Status Lymphaticus	..	1	..
Toxemia	2	..	..
Empyema	1	..	..
Ileo Colitis	..	4	..

	1917	1916	1915
Diphtheria	1	2	2
Measles	3	2	7
Volvulus	..	1	..
Erysipelas	1	..	..
Tubercular Meningitis	..	1	..
Tuberculosis	..	1	..
Burns	2	1	4
Accidental Injuries	2	..	2
Cause not known	1	..	..

COMPARATIVE TABLE.

Showing cases of Typhoid Fever reported for the past twenty-five years.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total.	Deaths.
1892-1893....	11	5	7	5	4	2	2	1	.....	3	13	13	66	6
1893-1894....	23	11	4	2	3	4	.....	1	10	14	29	19	120	12
1894-1895....	3	3	5	5	3	.....	2	6	4	15	17	31	94	7
1895-1896....	13	8	25	7	8	2	4	3	14	13	14	8	119	15
1896-1897....	8	3	2	2	1	2	.....	2	1	5	11	6	41	5
1897-1898....	2	11	2	2	4	1	.....	1	1	4	6	3	37	6
1898-1899....	3	1	1	....	1	3	1	.....	5	26	21	12	74	13
1899-1900....	5	2	....	1	2	1	2	1	1	10	28	8	61	12
1900-1901....	12	5	1	....	.....	.....	.....	2	2	13	12	11	58	10
1901-1902....	3	2	1	1	2	1	.....	4	2	17	29	3	65	7
1902-1903....	5	1	2	3	1	1	1	.....	.....	13	9	17	53	6
1903-1904....	16	5	3	....	.....	3	1	20	19	12	17	7	103	7
1904-1905....	6	11	3	....	.....	1	3	1	2	7	8	6	48	8
1905-1906....	7	4	1	3	.....	1	.....	2	2	6	52	47	125	20
1906-1907....	12	1	1	2	.....	1	.....	4	1	8	15	8	53	11
1907-1908....	2	4	....	1	.....	.....	.....	2	6	11	13	4	43	10
1908-1909....	7	....	.....	.....	3	.....	.....	3	4	6	27	8	58	6
1909-1910....	8	1	1	2	1	.....	.....	.....	2	17	27	21	80	12
x1910-1911....	2	1	....	3	3	.....	.....	6	4	2	11	10	42	9
x1911-1912....	3	1	3	1	1	.....	2	.....	1	4	5	6	27	8
x1912-1913....	2	1	1	....	.....	1	.....	2	3	29	21	6	66	10
x1913-1914....	4	....	.....	1	1	.....	1	.....	.....	9	5	11	32	9
x1914-1915....	1	2	1	1	1	.....	.....	.....	1	.....	2	1	10	7
x1915-1916....	3	1	1	1	.....	.....	.....	.....	.....	1	7	2	16	3
x1916-1917....	....	1	....	4	.....	.....	.....	.....	.....	3	1	3	12	4

xCases infected outside city not included.

KINGSTON.

DR. A. R. B. WILLIAMSON, M.O.H.

The year that has just closed has on the whole been uneventful, though marked by some advances from the view-point of public health.

The City Council last spring appointed Dr. G. W. Bell, V.S., Milk Inspector, under the provisions of the Milk By-law passed some months before. Dr. Bell has taken complete charge of this important work and is endeavouring to secure for us a milk supply of such quality as will conform with the present-day ideas of what is necessary in this respect. Patience on the part of the public as well as on the part of the Inspector will be necessary, as the available supply of milk in this district is not abundant; is is just sufficient to meet the demands with little or no surplus, and under these circumstances a campaign of education rather than a drastic enforcement of regulations is preferable, and it is along these lines that the inspector is working.

As I have pointed out on previous occasions, we still have a number of dwellings that are far from what they should be from a sanitary point of view. An effort has been made to improve conditions, but with the high cost of material, scarcity of labour and actual shortage of household accommodation not very much can be accomplished until the war is over.

The inspection of schools by Miss McCallum is of the greatest value both to the school children themselves and to the community at large. Those with defects are made aware of the same and advised to seek proper treatment, and on the other hand the beginnings of possible outbreaks of infectious diseases are often brought to light and the trouble stamped out before it becomes a danger to the community.

During the year several sewer and water extensions have been made and the number of houses without sanitary fixtures have been reduced almost to the vanishing point. But, as has often been pointed out, sanitary improvement along these lines is increasing our danger of infection from our water supply. As long as sewage is poured untreated into the great lakes and rivers, the sources of water supply for domestic uses, our danger from typhoid and other allied intestinal infections will be a very real and increasing danger. It is true that by chemical treatment such as chlorination the danger can be combated up to a certain point, but as the amount of pollution varies greatly from day to day, even from hour to hour, there are times when chlorination at a fixed rate is insufficient to overcome the contamination. Just now we have a few cases of typhoid cropping up, following the recent stormy weather, and until we adopt more enlightened methods of sewage disposal this menace will be ever present.

KITCHENER.

DR. J. MCGILLAWEE, M.O.H.

I beg to submit to you the Annual Health Report for the City of Kitchener for the year ending November 30th, 1917.

The general health of the city has been, on the whole, good.

There were 219 deaths registered during the year.

In 38 of these the cause was reported as premature birth.

There were 14 deaths from different forms of tuberculosis.

There were 11 deaths from cancer.

There was one case of typhoid, which ended fatally. In this case it was impossible to trace the origin of the disease.

There were 47 cases of diphtheria. Of these 33 were treated in the Isolation Hospital. Two deaths from diphtheria.

One death from whooping cough.

There were a number of cases of German measles and mumps, both of a light type—no deaths.

One case of scarlet fever. Origin obscure.

The water supply has been good, both as to quantity and quality.

The milk tests have been good considering that the standard of the quality of milk has been raised this year.

Slaughterhouses and dairies have been inspected, and in several cases needed improvements have been made.

The work of both the School Nurse and Sanitary Inspector has been especially satisfactory.

NIAGARA FALLS, ONT., March 26th, 1918.

I beg leave to submit a report of the Municipality of the City of Niagara Falls for the year 1917.

This city has been pretty much free of any contagious diseases during the year 1917. We have had a few cases of scarlet fever and measles; also possibly a half dozen cases of diphtheria.

Since we put in the chlorination plant we have been almost entirely free from typhoid fever. We use a very small percentage of chlorine in the winter, but in the spring and autumn increase the amount by one-third. We have the water tested frequently and find it very pure considering the source from which we get our water supply.

We find general satisfaction from our school nurse. All cases of rash, sore throat, sore mouth, ringworm, etc., are sent home from school for treatment. If too poor to pay, the Medical Health Officer treats them freely without charge. They are not allowed back to school until they get a certificate of health from the Medical Health Officer.

I have the honour to be your obedient servant,

H. LOGAN.

NIAGARA FALLS, ONTARIO, December 15, 1918.

To the Mayor and Council of the City of Niagara Falls, Ontario.

Gentlemen,—As Chairman of the Local Board of Health I beg to submit herewith my Annual Report for the year 1917.

On April 1st the usual notices for residents to clean up their premises were printed and distributed and I am pleased to report that the order was very well respected, and after a careful inspection of the city, very few premises were found in an untidy or unsanitary condition.

The custom of letting the contract for the collection of garbage was found to be unsatisfactory and complaints were continually coming in that collections were not made at many houses and that garbage was allowed to stand in some cases for weeks at a time. This system has now been done away with, the city having purchased its own horses, wagons, etc., and engaged men to collect and dispose of all refuse and garbage. This insures us of a house to house collection at least once a week, and from hotels and restaurants and boarding houses twice a week, or oftener if weather conditions require it. This is found to work out very satisfactorily.

The public lavatories along the line of the various railways and other public institutions have been regularly inspected, and whenever any complaints have been made, immediate action has been taken to remedy the trouble.

Outside lavatories for private residences wherever within 150 feet of sanitary sewers, have now all been done away with, and only in low lying sections where sanitary sewers cannot be constructed do such lavatories exist.

No orders for the construction of sanitary sewers were passed during the year and no applications were received.

The water supply has been tested at regular intervals and the reports found to be very satisfactory.

The milk supply is produced on farms within a radius of six miles of the city in most part, but at certain seasons it is very scarce and is brought in from Hamilton and as far west as Aylmer.

We have five licensed dealers delivering milk in the city, two of which pasteurize and possibly supply three-quarters of the total amount delivered. In all about three thousand (3,000) quarts are delivered each day.

In the majority of cases on the farms the milk is handled in a satisfactory manner; in other cases farmers are careless as to sanitary measures; cooling the milk properly before delivering is probably the greatest neglected measure.

Twice a year cows are inspected; stabling and care of milk by farmers are also looked into. Dairies are also inspected from time to time and milk tested frequently.

Respectfully submitted.

C. V. BRADFORD,

Chairman.

OTTAWA.

ROBERT LAW, ACTING MEDICAL OFFICER OF HEALTH.

In the absence of Dr. Lomer, Medical Officer of Health, now overseas, I herewith present report of the Health Department for the year ending October 31st, 1917.

In doing so I am glad to state that this year is one of the best in the annals of the Department, a cause for congratulation to the members and officials of the Board.

Since the year 1901, when I first became associated with the Department, Ottawa has been true to her motto, having *advanced* in many ways, but in none more so than in the state of her public health, and improved living conditions generally. This period has witnessed the formation of a Health Department and the provision of Hospitals for acute infectious diseases, and also through the energy and munificence of many of our public-spirited citizens the provision of the Royal Ottawa Sanitorium for the treatment of tuberculosis, which with the May Court Club Dispensary and the Visiting Nurse of the Ottawa Antituberculosis Association have been largely instrumental in cutting the death rate from tuberculosis practically in two.

The Civic Isolation Hospital has done wonderful work since its opening—the death rate from diseases treated there being but one-sixth of what it was in 1901.

The efforts of the educational work in regard to the care of children through the Milk Stations has resulted in a marked decline in infantile mortality.

The provision of Dental Clinics and the school Nurses have also been extremely helpful means towards bettering health of children.

Improvements in water supply, sewerage, garbage collection system, have all contributed markedly towards "CIVIC ADVANCE."

The most striking result of the many civic improvements is that the death rate has declined in these few years 5.34 per thousand; this represents a saving of 541 lives in Ottawa this year and is certainly ample return for the effort and outlay on the various factors concerned, and should be an incentive to still greater efforts on your part and continued co-operation and support by the Public, so that the Department with which we are more especially charged may still keep up with "CIVIC ADVANCE."

It is with most sincere regret that I record the loss sustained by the Department in the death of our Plumbing Inspector, James N. Jacques, who had been with the Department for ten years past. His long experience as a practical plumber had well fitted him for the post, which he had filled fairly and fearlessly in the public interest.

I attach herewith various tables and the reports of the sub-departments.

The estimated population is		101,549
Total number of births for 1917		2,449
Birth rate, 1917	24.20	per 1,000
" 1916	25.20	"
" 1915	26.83	"
" 1914	24.92	"
" 1913	26.38	"
Total deaths for 1917		1,734
Stillbirths		161
Deaths of non-residents		183
Corrected death rate for 1917	13.72	per 1,000
" " 1916	15.34	"
" " 1915	14.31	"
" " 1914	15.26	"
" " 1913	15.28	"

The death rate from pulmonary tuberculosis, deducting non-residents, is but one PER 1,000. Though this is still a sad toll, it is encouraging to those engaged in the fight against it to know that this is but one-half what it was a few years ago, and encourages us to work for still greater improvements in the near future.

Diphtheria.

The diphtheria situation again shows improvement, there being six deaths less than last year.

The 26 deaths which have occurred are in almost every instance more preferably chargeable to neglect in securing proper treatment in time. With the prompt use of antitoxin a death from diphtheria should be a rarity. Ottawa is not unique in this matter, as nearly all other cities show the same needless deaths.

It is most unjustifiable for anyone to treat sore throats, or croupy conditions, without advice of physician.

Lack of means is no excuse, as the Department will see to any unable to pay.

Considerable work has been done recently in newer methods of immunizing children against diphtheria, which may prove of great assistance.

Cancer.

The various forms of cancer have been responsible for 103 deaths, almost as many as tuberculosis.

Many of these might have been saved had proper treatment been secured in time. Do not waste time with the fake cancer cures.

Any irritation or injury predisposes to formation,—as, for example, cancer of the lip, tongue or throat may be caused through excessive smoking, jagged teeth, etc.

Those over forty are most liable, and should have any abnormal growth or non-healing sore seen to at once.

Women should pay special attention to tumours of breast and irregular hemorrhages occurring after the "change of life."

Typhoid Fever.

Ottawa has enjoyed almost complete immunity from typhoid. Out of the five deaths recorded, four were from outside the city. This is a striking testimony to the condition of our water supply and the generally sanitary condition of our city.

Scarlet Fever.

Scarlet fever, from which we were almost free last year, shows 245 cases reported, with eleven deaths.

Anterior Poliomyelitis. ..

This disease, popularly termed infantile paralysis, and after the New York epidemic of 1916 with its mortality of twenty per cent. such a source of terror to parents, appeared here this summer, but fortunately in a mild form, there being but 18 cases reported, only one of whom died, and the great majority of the remainder show but little injury from their attack.

Child Welfare Work.

The results of this work in this Branch of our Department have been most encouraging.

The "Better Baby Contest," carried out under the auspices of the Pure Food Show at the Exhibition this year, shows the increasing interest being aroused in these matters among the public. The thanks of the public are due to these gentlemen and ladies of the Victorian Order who co-operated to make it a success and to whom is due the honour of inaugurating in Ottawa this year this excellent means of advertising the importance of saving the BABY.

The total deaths of children under one year of age were 398, as compared with 566 last year, a decline of 168. If we deduct from this the 94 children dying at the Misericordia, the great majority of whom come from outside the city, it leaves us with a total of 304 chargeable to the mothers of the Capital, or a rate of 124 per thousand births registered. As in spite of all efforts a certain percentage of births are not registered, the actual rate per thousand births must be less even than this.

The thanks of the Board are due to the physicians who have kindly assisted at the clinics throughout the year, and to Miss Davidson and her nurses, who are to be congratulated on the great improvement shown this year and to be encouraged thereby to strive for still greater success next year.

In conclusion, I beg to testify to the faithful work of the staff and to thank you, Gentlemen, for your co-operation in the interests of public health in our city.

COMMUNICABLE DISEASES REPORTED FOR 1917, ALSO NUMBER OF DEATHS.

Disease.	November.	December.	January.	February.	March.	April.	May.	June.	July	August.	September.	October.	Total.	Deaths.	Of these the following number were from outside.
Pulmonary Tuberculosis....	14	4	7	10	6	10	8	5	6	4	15	14	103	113	8
Other forms of Tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	1
Typhoid Fever.....	3	4	3	1	1	1	2	1	1	2	5	3	27	5	4
Scarlet Fever	13	9	11	11	44	27	52	26	14	3	11	24	245	11	3
Diphtheria	48	55	41	30	25	34	32	34	31	25	39	39	433	26	
Smallpox.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	2	.....	
Measles.....	29	54	70	37	86	101	26	8	1	1	2	3	418	11	
German Measles.....	3	3	3	5	4	26	10	7	.....	.....	.....	1	62	.....	
Chickenpox.....	32	8	8	8	9	7	8	7	13	.....	1	3	110	.....	
Mumps	.....	.....	1	.....	2	1	2	1	1	.....	.....	.....	8	.....	
Whooping Cough.....	3	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	4	6	
Erysipelas	.....	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	4	5	
Poliomyelitis.....	.....	.....	.....	.....	.....	.....	.....	.....	5	5	5	3	18	1	
													1434	198	

DEATHS FROM TUBERCULOSIS BY WARDS, 1917.

Ward.	Pulmonary Tuberculosis.	Other Cases.	Total.
Rideau	3	.....	3
Ottawa	14	1	15
By	15	1	16
St. George's	11	1	12
Wellington	13	3	16
Central	8	4	12
Dalhousie	22	2	24
Capital	16	1	17
Victoria	3	1	4
Outside Cases	8	3	11
Totals	113	17	130

DEATHS FOR 1917 BY WARDS.

Wards.	Population.	1916.	1917										
		Nov.	Dec.	Jan.	Feb.	Mar	Apl.	May	June	July	Aug.	Sept.	Oct.	Total.
Rideau	3,539	3	4	3	2	3	3	2	6	3	2	3	4	38
Ottawa	9,587	11	15	16	16	15	13	16	23	15	16	24	12	192
By	7,838	7	13	17	14	15	15	17	13	11	15	15	15	167
St. George	13,329	15	12	16	12	13	16	10	11	11	9	16	12	153
Central	12,710	10	16	13	14	17	16	11	9	13	12	9	20	160
Capital	14,988	10	12	15	15	18	25	21	17	15	17	12	16	193
Wellington	13,406	15	25	25	16	28	16	21	18	16	18	19	19	236
Dalhousie	19,054	26	21	27	26	27	29	23	19	14	22	26	32	292
Victoria	7,098	13	21	9	14	8	8	12	10	10	10	5	3	123
Outside	.....	15	21	14	14	15	15	13	17	12	11	18	18	183
Totals	101,549	125	160	155	143	159	156	146	143	120	132	147	151	1,737

Note.—Ottawa Ward includes St. Charles Home which has 44 deaths.

DEATHS BY NATIONALITY.

Canadians	1,469	Germans	4
English	85	Dutch	1
Irish	77	Italians	6
Scotch	33	South Africa	2
Roumanian	1	Russians	12
Americans	18	Maltese	1
Australian	1	Parisians	2
Austrians	14	Swiss	3
Assyrians	2	Norwegian	1
Chinese	3	Danes	1
Jamaicans	1		1,737

Of the above there were 914 males and 823 females.

MORTALITY IN DIFFERENT INSTITUTIONS IN THE CITY.

Ottawa Maternity Hospital	14
Salvation Army Rescue Home	3
County Carleton Protestant General Hospital	92
Lady Grey Hospital	51
St. Luke's General Hospital	75

Water Street General Hospital	122
Misericordia Hospital	0
Misericordia Infants' Home	94
St. Patrick's Home	18
St. Charles Home	44
Old Men's Home	5
Perley Memorial Home	11

NUMBER OF DEATHS BY MONTHS, WITH AGES.

Age.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total.
Under 6 months.	22	30	29	15	23	23	24	22	19	34	41	30	312
6 months to 1 year	7	8	8	9	7	5	8	4	3	13	8	8	86
1 to 2 years....	7	10	8	6	.....	6	5	6	4	2	11	1	66
2 to 5 "	7	8	7	2	8	5	4	3	3	3	2	2	54
5 to 10 "	1	4	3	1	5	2	4	2	3	4	2	7	38
10 to 15 "	.....	3	1	3	3	5	5	3	1	.....	2	1	27
15 to 20 "	4	7	5	5	4	3	5	5	6	2	1	3	50
20 to 25 "	2	5	3	1	5	5	4	4	6	3	4	2	44
25 to 30 "	9	5	8	2	6	5	5	7	1	2	2	2	54
30 to 35 "	4	9	5	5	4	5	4	6	5	1	4	5	57
35 to 40 "	3	7	4	2	3	4	4	3	4	5	3	4	46
40 to 45 "	2	6	4	3	4	6	4	9	4	6	5	4	57
45 to 50 "	5	8	7	6	7	6	4	8	6	7	5	8	77
50 to 55 "	2	9	5	6	5	5	6	9	8	8	3	6	72
55 to 60 "	4	2	3	7	6	7	8	9	3	6	7	12	74
60 to 65 "	8	1	9	6	5	8	6	4	6	5	8	8	74
65 to 70 "	8	9	7	4	8	9	7	6	4	5	10	5	82
70 to 75 "	7	9	9	12	10	9	10	12	6	9	6	5	104
75 to 80 "	6	2	7	10	8	5	9	5	8	3	8	8	79
80 to 90 "	4	2	7	13	14	12	12	5	8	2	5	12	96
90 up.....	.....	2	3	5	4	5	1	.....	4	.....	2	1	27
Stillbirths	13	14	13	20	20	16	7	11	8	12	8	19	161
Totals.....	125	160	155	143	159	156	146	143	120	132	147	151	1,737

JOSEPH RACE, CITY BACTERIOLOGIST AND CHEMIST.

I have the honour to submit to you my report upon the work performed in the Civic Laboratories during the year ending October 31st, 1917.

During the year a total of 10,674 samples has been received and examined: this is a slight reduction on the number examined during the previous year and is due to a decrease in the number of swabs received for examination for diphtheria.

Water.

The usual tables showing the chemical, bacteriological and physical condition of the raw and treated water have been prepared in the standard form adopted by the New England Waterworks Association and may be obtained from me by those interested in this data.

The condition of the raw river was generally favourable for chlorination; during the spring floods the river water was augmented by surface soil washings, but these were satisfactorily treated by the chloramine process which had been installed a few months previously.

Since the end of the statistical year the old system of water supply has been abandoned and the new pumping station and overland pipes have been placed in operation. *This system absolutely precludes all possibility of contamination of the water after treatment at the pumping station at Lemieux Island, and guarantees a supply of safe water to the consumers.*

The bacteriological condition of the tap supply has been satisfactory at all times and an ample margin of safety has been provided. This is corroborated by the number of cases of typhoid reported during the year: 1915, total cases, 111; 1916, 55; 1917, 27. Deducting the outside cases, i.e., cases in which there is definite information that the disease was contracted outside the city, the number is the same as last year, viz., 12; but the deaths have been reduced from 4 to 1. This single death from the city is one of doubtful diagnosis.

This rate of 1 per 100,000 places Ottawa in the front rank of all the cities in the world.

Continuing the table given in last year's report as to the monetary value represented by the reduction in typhoid since my appointment in 1912, the following figures are obtained:

Year.	Cases.	Deaths.	Value of loss of vital energy.
1912	1,300	84	$660,000
1913	90	14	75,000
1914	86	9	56,000
1915	47	12	56,000
1916	12	4	18,100
1917	12	1	6,900

The loss represented by the cases and deaths in the pre-epidemic years would average about $100,000 per annum. Last year the loss was $7,000, or a reduction of over $90,000, and the water treatment cost approximately $18,000 per annum (including laboratory service). *These figures show that the treatment has been an excellent business proposition to the citizens of Ottawa.*

In February the chloramine process, as worked out in your laboratories, was installed on the main plant and has been operated continuously and successfully ever since. The reduction in the amount of hypochlorite used represents a saving of over $3,000, and owing to this and other factors I anticipate that the cost of treatment for 1918 will be the lowest since chlorination was commenced.

My chloramine process has been installed at Denver, Colo., and I have recently heard that the New York City water department proposes to use it for treating a polluted stream discharging into Croton Lake.

This matter is mentioned because an effort has been made at various times to both increase the routine work of the laboratories and to reduce the staff. This would have prevented such experimental work being performed as has led to the economies mentioned above. I cannot emphasize too strongly the fact that properly equipped and staffed laboratories are a paying concern and that the provision of facilities for research work is good business. Inadequate recognition of this in the past has led to Canadian scientists crossing the border to the South, where their services are more appreciated and where they have assisted in building up industries which would otherwise have been developed in this country.

Wells.

Now that the overland pipe scheme is in operation I believe that more stringent action should be taken regarding the polluted wells. I would recommend that the well by-law be amended so as to facilitate such a policy. Wells that are either constantly or intermittently polluted should be permanently closed, because they are a danger, not only to the users, but to the whole community. The by-law permits the re-opening of wells. This, in my opinion, should not be permitted unless no other supply is available and the owner can definitely ascertain the source of pollution and give adequate guarantees to prevent a recurrence.

Swabs, Sputums, Widals.

The number of swabs and sputums submitted for examination is still much too small in proportion to the population of the city. Last year I made a recommendation that steps should be taken to call the attention of medical men to the laboratory facilities at their disposal. This was not acted upon. I am convinced that there are still many practitioners who are not cognizant of the facilities provided by the city, and I believe that the only way to remedy this defect is to put the information before them in such a manner that it will be kept constantly before them.

Milk.

The bacteriological content of the raw milk supply is distinctly higher than last year, the average count per cubic centimetre being 388,000, as compared with 181,000 last year.

The percentage of samples deficient in butter fat was 2.5, as against 2.2 in 1916, and 16.1 per cent. deficient in total solids, as compared with 10.8 per cent. in 1916.

The average quality of the various classes of milk is as follows:

—	Fat	Total Solids.	Solids not Fat.	Bacteria per c.cm.
*Farmers' Milk	3.94	12.70	8.75	388,000
Pasteurized Milk	3.68	12.43	8.75	34,000
Nursery Milk	3.92	12.79	8.87	54,000
Certified Milk	4.02	12.67	8.65	13,500

*These figures represent the average of the genuine samples only.

Miscellaneous.

Once again there has been a considerable number of samples examined for other departments of the city and from the Police Department.

J. B. Hollingsworth, Chief Food Inspector.

I herewith submit a report of the work done by the Dairy and Food Inspection branch of the Department for the year ending October 31st, 1917.

Re Milk.

During the year, from 29 milk vendors, 2,197 samples were collected and tested, both chemically and bacteriologically at the Civic Laboratory. The samples are collected as usual during the early morning from the different milk vendors on the streets, and are brought to the laboratory for analysis. The Inspector, while collecting the sample, examines the milk containers, and also takes the temperature of the milk, to see that the milk is kept cold and that the containers are sound and clean. Out of the above number of samples, over 98 per cent. were found to be up to our standard in butter fat.

The bacteria count has been somewhat higher than last year. Two milk vendors who were largely responsible for this are now out of business.

Householders are again warned of the need of keeping milk cold, clean and covered after delivery to them; also of the importance of prompt return of milk containers in a cleanly condition. It is against the law to retain and use these containers for other purposes, as some people do. The careless consumer in this way is doing his bit towards increasing the cost to everyone else.

By-law No. 4418, regulating the licensing of milk vendors and the production of sale, and the sale of milk within the city, has received the necessary sanction—which requires that all milk shall be pasteurized save that which comes from herds tested and found free from tuberculosis.

Re Meat.

Five thousand and eighty-seven pounds of meat were confiscated as unfit for food. Three thousand five hundred and ten pounds of this was condemned for being tuberculous.

Two hundred and twenty-eight victualling permits were given.

Two hundred and twenty-five milk permits were issued.

There were forty-three permits for restaurants given out.

Eighty-two butcher licenses were taken out.

So far as this branch of your Department is concerned, five hundred and seventy-eight permits were granted, for which the city received five thousand six hundred and eighty dollars.

Re Bakeshops.

Our bake and confectionery shops have been carefully and regularly inspected. Inquiries have also been made as to the weight of bread. Several of the bakers have been fined, and any bread found underweight has been confiscated, all such, when seized, being given to the Charity Officer for distribution.

All meat, fruit, and vegetables that were condemned were sent to the incinerator and there destroyed.

Re Ice.

Sixteen ice permits were given last year for the harvesting of ice for the city's consumption on the Ottawa, Rideau and Gatineau rivers.

Regular inspections are made of all wholesale houses and other places where food is stored.

Co-operating with Department.

I am glad to report that during the year there has been a rather noticeable disposition on the part of restaurant-keepers, proprietors of butcher shops and those conducting ice-cream establishments and fruit stores to co-operate with the Department. Requests that we have made have been in most cases cheerfully and readily complied with, and those supplying foods of various kinds to the citizens have been courteous in responding to our requests or suggestions. While there may have been a few exceptions to this there were not many, and I have noticed an improvement in the disposition and desire to try and keep various city by-laws, and to display and arrange fruits and other lines of produce in a cleanly and sanitary manner.

In conclusion, I desire to testify to the good work done during the year by the members of the branch of your Department under my Direction.

G. O. S. Laflamme, Chief Sanitary Inspector.

I beg to present herewith my seventeenth annual report of the work done by the Sanitary Inspectors in your Department during the past year.

Apartment houses inspected	378
Abatement of nuisances	2,495
Barber shops inspected	315
Butcher shops inspected	27
Cellars inspected and found dirty	291
Cellars inspected and found clean	333
Cellars found with water in same	184
Contractors' closets inspected	13
Cases for prosecution	24
Convictions and fines	46
Contagious disease placards removed by Inspectors	3
Chemical closets installed	2
Comfort stations, number of inspections	435
City wells inspected	3
Calls made *re* installing water-closets	8
Complaints made to Inspectors	512
Complaints received in the office (See note *re* this)	10,000
Complaints well founded	800
Complaints unfounded	178
Calls, number made yearly	7,158
Drains found choked	31
Dead animals, *re* number reported on	36
Dead animals, number removed	36
Defective plumbing reported	54
Drains tested	19
Dump notices put up	32
Dumping in sewers, *re* complaints	6
Drawing manure through streets uncovered	9
Dwelling houses inspected	1,596
Dumping ground inspections	553
Flush closets sealed	1
Flush closets installed	55
Faulty manure boxes	498
Furnaces, defective	12
Frozen plumbing	107
Fruit store inspections	77
Garbage receptacles, number ordered	339
Hide dealers, premises inspected	41
Hen houses inspected and found filthy	28
Houses ordered to be vacated	9
Houses inspected and found dirty	15
Houses placarded	38
Hotel urinals, inspections	118
Illuminating gas, complaints	3
Ice field inspections	89
Ice inspected on street for storage, number	23
Ice houses inspected, number of inspections	42
Junk and second-hand shop inspections	286
Keeping fowl in cellars and dwellings	45
Keeping dogs in dwellings	10
Keeping horses in shed	3
Lodging houses inspected	389
Laundry inspections	800
Laundry permits, number issued	80
Livery permits, number issued	8
Lemieux Island inspections	104
Livery stable inspections	276
Lanes inspected and found clean	46
New manure boxes built	25
Number of manure piles removed	73
Overloaded manure boxes, number of	29
Other nuisances in vacant lots	13
Overcrowding inspections	181
Overcrowding notices given	36
Privy vaults, number to be cleaned	534
Privy vaults ordered removed	84
Privies inspected	205
Privy vaults inspected and found cleaned	3,860
Premises found filthy	100
Patrolling the Ottawa River, number of days	25
Porter's Island inspections	17
Private stables inspected, number of inspections	2,118
Placards removed	18
Roofs found leaking and defective	234
Refuse on streets, complaints	37
Refuse, complaints *re* same in lane	78
Refuse receptacles, improperly kept	396
Reports *re* garbage collections	1,950
Restaurants, inspections	7
Referred to Food Inspector, *re* complaints	10
Reports made to Engineer's Dept.	23
Reports referred to Fire Chief	8

Reports *re* privy vaults being cleaned made by Contractor, inspected and found not cleaned	39
Reports *re* privies repaired	92
Reports *re* privies inspected and found cleaned by Inspector	427
Reports made to Chief Plumbing Inspector	37
Sewer gas complaints	14
Stagnant water found on vacant lots	35
Stables newly built	83
Sanitary cards, new ones made	225
Samples of water tested by the Bacteriologist	6
Soldiers' barracks, inspected	5
School inspections	111
School urinals inspected	51
School absentees	1,020
Sheds found dirty	51
Stable inspections	37
Samples of ice taken for test	1
Stables found dirty	99
Swimming pool inspections	24
Stables found unfit and closed by us	20
Stables removed	2
Shop inspections, number found clean	16
Shops, vacant, number of inspections	13
Theatre urinals inspected	10
Vacant house inspections	59
Ventilation reports	15
Verbal notices given	2,495
Wells placarded	22
Water services found defective	59
Water closets found filthy	3
Watching trains *re* infantile paralysis	166
Wells inspected to see if placards were on	397
Wells re-placarded	6
Workshop and factory inspections	149
Written notices sent out by Inspectors	1,050
Waste of water reported	38
Yards found dirty	1,250
Yards inspected, *re* receptacles, and found clean	2,780
Yard inspections	4,122
School taps placarded	2
Re disinfection calls made by Inspectors	67
Entries made on sanitary cards	8,624
Entries *re* plumbing matters	1,712

Re Sanitary Inspectors.

All have worked hard and well to keep the city in a cleanly and sanitary state.

After an experience of sixteen years as Chief Sanitary Inspector, in which the number of inspectors has varied from two at the commencement to as many as twenty at special times, I can fairly testify that in my opinion the present staff is as small as we can succeed in accomplishing good work with. I believe that the small economy to be effected by a further reduction of the staff would not compensate for the impairment in the efficient work now being done by our present staff of experienced men.

Re Orders Received.

I wish also to state that the number of orders received from the Medical Officer of health and by phone in the office was over 10,000, which goes to show the number of complaints attended to by the Inspectors. This does not include the complaints received by the Inspectors when they are making their daily inspections.

Prosecutions.

The number of prosecutions in the police court for infringement against the Public Health Act amounted to 46.

Re Removal of Privy Vaults.

The number of improvements installed this year amounted to only 55. This is due to the scarcity of money, the high cost of workmanship and material, also owing to the nature of the land where some of the houses are situated, same being built on rock. A good many people have promised to install the improvements as soon as they can afford the money; also many of the owners are away at the war and we do not wish to make the hardship for those at home any harder.

Re Sanitary Cards.

I may say that besides the routine work, the Inspectors made out 225 sanitary cards and the stenographer entered 8,624 entries on the backs of these cards in the cabinet in the office. This does not include entries that were made pertaining to the 1,050 written notices sent out by the Inspectors. The secretary made 1,612 entries *re* plumbing matters on these cards. A complete record of any complaint or nuisance at any house in the city is kept on the back of the card concerned.

Patrolling the Ottawa River and Inspecting Lemieux Island.

One of our sanitary inspectors devoted 23 days of his time patrolling both sides of the Ottawa River and another inspector made 104 inspections *re* sanitary matters at Lemieux Island. I will again ask that a continuous patrol of the shores of the Ottawa River be made as I consider this has a lot to do with keeping the water supply of the city clean.

Streets.

I must take this opportunity of congratulating our Engineering Department for making Ottawa a dustless city, and we should be proud of our dustless streets.

Civic Comfort Stations.

The Public Comfort Stations on O'Connor Street have proved a benefit to the public at large, and I believe that we should have at least two more of these stations erected in Ottawa for the betterment of lanes and yards.

Conclusion.

In conclusion I wish to thank the sanitary inspectors and the clerical staff for their kind assistance and co-operation given me during the year.

I trust that the work performed by us all has been satisfactory to you.

PETERBOROUGH.

C. Hewitt Amys, M.O.H.

I beg leave to submit my annual report for the year ending November 30th, 1917.

There were 450 births and 365 deaths during the year. These deaths include a number of people who died in the hospitals, but came from outside municipalities.

It is gratifying to note that we had from the common contagious diseases of childhood, only three deaths—one from diphtheria and two from whooping cough; but unfortunately we had 14 deaths from tuberculosis.

We have had the following communicable diseases:

1 case of cerebro-spinal meningitis.
17 cases of scarlet fever.
8 cases of diphtheria.
7 cases of measles.

The physicians and laity still refrain from reporting cases of whooping cough and tuberculosis; but as for scarlet fever and diphtheria, these two diseases are promptly isolated in the hospital, and thus we are able to arrest the spread of same, and possibly save many a young life. When a case is reported to me, I report it to the school nurse and the teacher. They in turn hunt up the absentees, find out why they are absent, and, if sick, ascertain the nature of the illness. At present all the schools have not the Bell telephone and this causes considerable delay before I can get into communication with the teacher and the nurse; therefore, it is very essential that a Bell telephone be installed in each school.

Recommendations.

I beg leave to recommend the following:

1. That this Board place itself on record as opposed to the present Provincial Educational System of having "stock books" in our schools, i.e., the handing down of the same books from one pupil to another, year after year. Surely with the present very cheap supply system we can, if necessary, pay a little more and let our motto be "let each child have a new book." Again I advise you not to let this matter drop here, but to use all your power to have the above system abolished. I consider it to be a most insanitary practice. How would you like to give a child an old book that, possibly, a consumptive had the previous year?

2. That the plan of the property known as the "Hilliard Farm" be so altered as to provide for a roadway to run from a point near the Protestant Home to the Isolation Hospital. The advantages of same would be many: (*a*) It would enable us at some future date to connect up the plumbing of the hospital with the sewer; (*b*) it would give us at all times a passable approach to the hospital; (*c*) after it was graded, the ashes from the hospital and northern section of the city could be used to top dress same; (*d*) it would also make the present "Hilliard Lots" more saleable.

3. A free isolation hospital for the citizens of Peterborough. How much do you suppose we would have lost this year, up to the 6th of December, if the hospital had been free? Only $412.95, i.e., about one-eighth of the cost of its maintenance during that time.

An isolation hospital which is a boon and a benefit to every citizen should be free, and with a free hospital would go better co-operation, fewer communicable diseases and a lighter burden for those afflicted.

Sanitary Inspector's Report.

I have the honour to submit my first report for your consideration. I assumed the duties of Sanitary Inspector on the 21st of March, 1917. I find it impossible to give a complete detailed report as a great deal of this work has to be gone over several times. The following list of complaints will give you some idea of the work being done by the Sanitary Inspector:

Scavenger complaints	630
Garbage complaints	532
Slaughter houses inspected	22
Dead animals	27
Scarlet fever cases	17
Diphtheria cases	8
Measles cases	4
Milk tests	268
Notices served	144
Cow byres inspected	46
Stables inspected	50
Houses disinfected	3
Cesspools found	20
Burying night soil	5

Inspected all laundries.
Inspected all eating houses.
Inspected all Bakeries.
Inspected 2 factories *re* sanitary conditions.

Milk test—average for April	3.50
Milk test—average for May	3.60
Milk test—average for October	4.10
Milk test—average for November	4.00

The above figures do not rightly convey the amount of work done. Considerable time is taken up in return calls after the first visit. Sometimes I have to go several times before the instructions are carried out.

Scavenger Complaints.

Scavenger complaints, 630. I find some of the tenants refuse to pay the scavenger forty cents when the work is done, and others refuse to have the work done every month. This takes considerable time to investigate and straighten out.

Garbage Complaints.

Garbage complaints, 532. A number of these complaints are justified, others are groundless.

Notices Served.

Number of notices served, 144, to those who refused to comply with the Health By-law. On return visit to above places, I find improvement.

Milk Tests.

I have submitted the averages of milk tests for April, 3.50; for May, 3.60; for October, 4.10, and for November, 4.00. The milk tests throughout the summer months have been above the standard. I submit these tests to show the difference between the spring and fall milk.

Inspections of Dairy Farms.

Dairy farms. I find majority in first-class condition and owners willing to receive suggestions from the Inspector. Other where farm is rented not in good condition. Landlord will not make repairs and tenants do not feel disposed.

Slaughter-houses.

Slaughter-houses inspected, 22. Conditions with few exceptions are good. I found several with blood running direct from slaughter-house to pig pen, which has been changed and put in proper condition.

Have inspected all fruit stores, fish stores, bakeries, laundries, butcher shops and restaurants and find them in fair condition and willing to accept suggestions made by Inspector.

I would like to express here, appreciation of the assistance given me by Mr. F. W. Miller, Relief Officer, both in the office and in investigation complaints.

PORT ARTHUR.

C. N. Laubie, M.O.H.

I have the honor to present my report for the year 1917.

It has been a fairly satisfactory year as regards contagious diseases, although the death rate in the city was higher than in 1916.

In 1916, there were one hundred and ninety-seven deaths from all causes.

In 1917, there have been two hundred and thirty-seven.

Stillborn	18
Premature birth	35
Under two years or age (exclusive of stillborn and premature)	43
From two to five years	4
From five to ten years	2
Over ten years (medical)	85
Over ten years (surgical)	3
Accidental	26
Tubercular	13
Brought from outside city for burial	6
Typhoid (brought from outside to our hospital)	2
	237

You will note the two deaths from typhoid. Both of these patients were brought here for treatment in our hospital, where they died. We can congratulate ourselves on the entire absence of typhoid in our city. There were thirteen deaths from tuberculosis. In 1915 we had seventeen deaths and in 1916, sixteen.

As yet, we have to treat tubercular patients in our general hospitals, which is very dangerous to the other patients, and unjust also to the tubercular patient, as it is impossible to give them proper treatment there. We have drawn attention to this matter for several years, but so far without results. The Government, which should provide a proper sanitarium for this class of patients in this district, has its hands full, at present, with matters relating to returned soldiers, etc., and also has not the necessary funds during these hard times. They prefer to have us send our patients to Gravenhurst for treatment. Unfortunately, Gravenhurst always seems to be overcrowded. Anyway, we are seldom able to get patients in there and then only after long delays. In spite of the hard times and the stringency of the money market, I think your Board and the City Council should urge upon the Government the need of a sanitarium in this district, for the treatment and care of tubercular patients.

As you will note, we had heavy outbreaks of measles and mumps last winter. These outbreaks started in 1916 and were brought here from the Rainy River District, by soldiers of the 141st Battalion, and spread throughout the city schools. We managed to get them under control by April, I am pleased to say, without having to close the schools. The number of contagious cases reported were as follows:

Scarlet Fever.

Year.	Cases.	Deaths.
1915	62	0
1916	2	0
1917	8	0

Diphtheria.

Year.	Cases.	Deaths.
1915	3	0
1916	4	0
1917	6	0

Measles.

Year.	Cases.	Deaths.
1915	6	0
1916	64	0
1917	318	0

Whooping Cough.

Year.	Cases.	Deaths.
1915	6	0
1916	44	2
1917	6	2

Infantile Paralysis.

Year.	Cases.	Deaths.
1915	0	0
1916	2	1
1917	0	0

Typhoid Fever.

Year.	Cases.	Deaths.
1915	13	1
1916	11	3
1917	2	2

In regard to the diphtheria, a child was brought here from Montreal while it was ill with a sore throat, another child in the house took ill, and, on medical advice being called, the cases were diagnosed as diphtheria. Two children, from another family, who played with them, also took ill, and were sent to the Isolation Hospital. During the outbreaks of mumps and measles among the soldiers last winter we were so badly overcrowded at the Isolation Hospital, we were forced to open a temporary hospital on Pearl Street, for soldiers.

We treated thirty-seven soldiers for measles and twenty-three for mumps in the Isolation Hospital, and twenty-four in the temporary hospital on Pearl Street.

Altogether we treated eighty-one patients in the Isolation Hospital, sixty soldiers and twenty-one civilians; the number of days nursing during the year being 2,631, at a cost of $2.01 per day.

Births.

1916.	Males	270
	Females	242
	Total	512
1917.	Males	231
	Females	308
	Total	539

This shows an increase of 27 for this year.

I started publishing a weekly milk report in the city paper this year. This report seems to meet the approval of all citizens, with the exception of the milk dealers. However, there has been a vast improvement in the condition of the milk, and we propose continuing it throughout the year.

I again have much pleasure in commending the satisfactory work done by Mrs. Flannigan, the Matron at the Isolation Hospital. She has given satisfaction in the treatment of the patients, and also for the excellent condition in which she keeps the hospital.

School Inspection.

The School Nurse, Miss Jones, has been busy during the year, visiting the schools daily, examining pupils sent to her by the teachers, and following absentees to their homes, to find the reasons for their being absent. In this manner we have been able to trace children ill with contagious disease, and prevent its being carried to the schools. The Nurse reports to me daily the result of her inspections, so I am able to keep a close watch on those who are ill. We have examined for eye, ear, nose and throat troubles, and passed on to the specialists nineteen children, whom we operated on in the hospitals. I am again pleased to be able to commend the good work done by Miss Jones. The following is the list of her visits and examinations during the year. You will note the large number of examinations in March, April and October. At that time there was a general examination of all scholars in the schools.

School Inspections.

Months.	Visits at Schools.	Home Calls.	Examinations.
1916			
November	58	152	37
December	23	58	44
1917			
January	54	280	15
February	58	234	40
March	56	158	23
April	23	52	1,197
May	47	130	822
June	44	56	33
September	36	25	27
October	32	41	2,208

Miss Jones was also engaged in health work during the summer holidays. She was of great assistance in visiting and instructing mothers in the care of their babies. Her services seemed to be much appreciated. I am glad to be able to say that 1917 was a banner year as regards good health among infants. We had less sickness during the usually dangerous months of July and August than we have had during the twelve years in which I have held office.

We have had a smaller number of charity patients this year. There has been a steady demand for labour, and every person able to work has been busy if they wished it. Only in cases where the bread-winner was ill I was called. I also attended a number of soldiers' families. I have treated altogether in my office thirty-six patients, and made twenty-four visits on the sick in their homes.

I addressed a number of mothers' meetings on the care of children and the prevention of contagious disease. I also distributed a number of pamphlets received from the Provincial Board of Health.

I gave a two-month course in First Aid Work, lecturing two evenings a week. We had a splendid attendance of thirty-four ladies.

I have attended the sick children in the children's shelter. Miss Foote is the Matron in charge.

With the Sanitary Inspector I have visited and inspected boarding-houses, hotels, bunk-houses, restaurants, butcher shops, bake-shops, fruit stores, the market and laundries, the Current River Park, dry dock, and elevators; all lanes, and a large number of yards, the dairies, city market, and slaughter-house. We had two visits from Dr. George, the District Officer of Health, during the year. With him I visited all the dairies, the elevators, dry docks, and coal dock section. We also had a visit from Mr. White, the District Inspector for the Provincial Board, both of whom expressed themselves as well pleased with the general cleanliness and health of the city.

FINANCIAL STATEMENT FOR 1917.

General Expenses of the Board.

Salaries:	
M.O.H., Sanitary Inspector, School Nurse, and Stenographer	$5,365 00
M.O.H., for expenses to annual meeting at Toronto	100 00
Lights and phones	125 59
Feed for horse	101 80

Drugs, etc.	7 25
Horse shoeing	14 50
Street Railway tickets, M.O.H., Inspector, Nurse, and Isolation Hospital	86 66
Ambulance and rigs	17 00
Printing	31 84
Postage and express	5 00
Book for School Nurse	2 50
Closet pail	1 30
Total	$5,858 44

Pearl Street Hospital.

To Nurse	$100 00
To cook	50 00
To furnishings	332 76
Rent	50 00
Groceries, meat, milk, etc.	136 64
Drugs	25 20
Marks Clavet Dobie Company	15 95
Moving furniture, and repairs	10 56
Coal	60 50
Wells and Emmerson	71 27
Total	$852 88

Isolation Hospital.

Salary to Matron	$900 00
Special Nurse	276 00
Repairs to Hospital	331 22
Coal and wood	489 40
Board account for patients	1,568 85
Power and light	50 32
Plumbing	47 52
I. L. Matthews	73 80
Mahon Company	29 53
Dunn Hardware Company	1 10
Drugs, etc.	140 26
Marks Clavet Dobie Company	54 45
Wells & Emmerson	44 75
J. Merrill	21 20
Woodside Bros.	17 40
Pigeon River Lumber Company	23 91
City, for hauling water	7 50
A. E. McDonald	19 60
Bray & Company	3 15
Allowance for help and provisions	1,200 00
Total	$5,299 96
Total expenses	$12,011 28
Credits from Board accounts $1,214 00	
Credit from sale of stove 20 00	
	$1,234 00
Balance	$10,777 28
Amount still due from the Militia Department	$175 00

STRATFORD.

J. A. Robertson, M.O.H.

To me it is a great pleasure to present to you a most favourable report of the city's health for the past year.

Vital Statistics.

I find there were registered with the City Clerk three hundred and thirty-three births, one hundred and fifteen marriages, and one hundred and sixty-three deaths. It is gratifying to know that nineteen per cent. of the deaths were over seventy years old. I find that the death rate is only 9.5 per thousand, basing our population as per assessor's report. This is certainly a remarkable record and keeps our city as heretofore on the "front line."

During the early part of the year we had a number of cases of scarlet fever, measles, mumps and chicken-pox, but by exerting every precaution, employing every method of isolation, quarantine and disinfection, we were able finally to cope with the invaders.

Sanitary Inspector.

The city was thoroughly inspected as to sanitary conditions. Citizens were requested to assist to make our city beautiful by keeping lawns in front of premises in good order and planting flowers to add to the beauty of surroundings. A hearty response was given, as was evidenced by the clean and beautiful appearance of each dwelling. Exceptions are always found, and notices were sent to all parties not observing the regulations.

The Sanitary Inspector zealously carried out his duties. Restaurants and all places where food-stuffs are dealt out were carefully looked after. Butcher shops and slaughter-houses have all been inspected several times during the year and were found in most cases trying to observe the regulations.

Milk was tested from time to time and on the whole was well up to the standard.

Condition of Dairies.

Dairy barns were all inspected and found in a very fair condition, although there is still room for improvement. The cows on the whole seemed healthy and in good condition.

Our water supply at the beginning of the year was not up to the mark, but now, through the untiring efforts of the Utilities Commission, particularly the chairman, such changes have been made that now we have absolutely pure drinking water. We have been having frequent tests of the water made, and as a rule results were very satisfactory. The citizens can rest assured that after a few more changes we shall have the purest water supply in the province. The river water is now completely shut off.

Grocery Stores.

Grocery stores and cellars were inspected and found in most cases clean and nicely kept.

Outside Privies.

The abolishing of outside privy vaults has not been so extensively done this year as we would like, but owing to war conditions and the cost of modern fixtures having advanced so in price that owners of houses were in many cases unable to meet the expenditure without great personal inconvenience. Notwithstanding unfavourable conditions, seventy houses have been modernized during the year. We are progressing favourably in the matter.

The Sanitary Inspector has regularly inspected butcher tables and meats in market shelter, weighed butter offered for sale frequently and usually found it full weight. Only one butchered animal offered for sale was found by him unfit for food. He had the same destroyed.

He draws attention to the carelessness of many housekeepers in throwing refuse in backyards, and also not careful enough about putting garbage as dry as possible and well wrapped in paper into the garbage can. He has time and time again notified people to attend carefully to this matter in the interest of the collectors and the trouble it would save at the incinerator.

Dumping Ground.

We have some difficulty in finding a dumping ground for the accumulating stuff that cannot be disposed of by the incinerator. We would urge that a dumping ground be procured to provide for this matter.

I would respectfully call the attention of the city Council to the unsanitary condition of the basement of the City Hall. The ventilation is of the worst, and steps

should be taken by the Council to have the same remedied. There should be no putting off matters relating to health protection, and the chairman of the committee whose duty is to frame means for carrying out suggestions made for health protection should act as promptly as circumstances permit.

Park Board.

I have pleasure in congratulating the Park Board on work done to beautify the city, thereby tending to its healthfulness. Every pleasing object witnessed tends to promote health. Contemplated additions will still further add to present accomplishments.

Sewage Disposal.

Frequent visits were made to the sewage disposal works, and although conditions were somewhat satisfactory, yet there is still some grounds for improvement. The engineer has been faithful in his duties in connection therewith.

ST. CATHARINES.

F. King, M.O.H.

Annual Report of Chairman.

In accordance with the requirements of the Public Health Act, I have the honour to present to you my annual report.

It is very gratifying to state that the statistical reports of the Secretary of the Local Board of Health show the health standard and the sanitary conditions during the past year to be very satisfactory. Although there was an increase of over 1,100 in population, and an increase in the number of births of 84 over the previous year, there was a decrease of 55 in the number of deaths, the figures of the death rate being respectively 308 in 1916 and 255 in 1917.

In 1916 there were 471 cases of communicable disease, with 33 deaths; this year but 107 cases, with three deaths.

The work on the construction of the new and enlarged trunk sewers in the northern section of the city has been continued as labour conditions have permitted. This work has been essentially necessary in the interest of the public health, and anything which will tend to improve health conditions cannot be safely disregarded. During the past twelve months there has been constructed 6,332 feet of sewer of 24 inch and upwards; of this, 5,211 feet was from 54 inch to 72 inch in diameter. Two hundred sewer connections were made to private homes. The garbage collecting system, imperfect as yet as it may be, is and will be an increasing factor in making for improved health conditions and a clean city, in conjunction with sewers and pavements.

Frequent tests of the city water, taken from different parts of the city, show it to be free from any pathogenic germs. Only two deaths are reported from typhoid fever, out of ten cases, and these were nearly all contracted outside of the city.

During the year the Local Board of Health has considered favourably a change as regards our Isolation Hospital. When built, the law did not permit of its erection near the General and Marine Hospital. That law has since been changed. It was not permissible a few years ago, but is now, to have cottages or wards erected in the vicinity of the General and Marine Hospital for the care of diseases of a contagious character, where there would be less danger of cross-infection, and where the patients would have the care of a larger staff of trained nurses, and the nurses in training have the advantage of gaining an experimental as well as a theoretical knowledge of such cases. The Board of Trustees of the General and Marine Hospital and the Superintendent look with favour upon, and, I am confident, are prepared to co-operate with the Local Board of Health in bringing about the change proposed, and I trust that next year this may be brought about, and I am sure the Council and people will approve a change which will be in the direction of a right economy, as well as in the combined interest of patients and nurses.

The Medical Officer of Health, in his report to the Board, refers to the experiences gained through the military medical examinations since the outbreak of the war, and to the deplorable fact that so large a percentage of the young manhood of the country have physical imperfections which unfit them for military service and the defence of their nation. No doubt this result arises, to some extent at least, from an almost complete lack of physical exercise and training during their early school days. The con-

ditions are largely remediable, and the best attention of school boards and parents should be given to such athletic and physical training as would produce a more robust physical manhood. "A sound mind in a sound body" should be our endeavour for the growing generation. To inculcate a more general inclination in our schools for athletic sports and games, necessitating more outdoor exercise and pastimes, I have felt that junior athletic organizations should be formed in each public and separate school, and that once or twice a year a field day of outdoor sports should be observed, and as a small encouragement in that direction I am prepared to offer two suitable shields for competition, one for the boys and one for the girls, to be awarded on a series of points, all the details of which competitions could be arranged in due time.

Annual Report of M.O.H.

I beg to submit the annual report on the sanitary and other conditions relating to the health of the city for the year ending October 31st, 1917.

Generally speaking, the health of the city has been very satisfactory, and the death rate unusually low.

Vital Statistics.

The total deaths from all causes was 250, as compared with 308 last year, and with 234 five years ago, when the population was over five thousand less than now.

No outstanding event, as regards contagious disease, has been observed.

I am indebted to the Secretary for the following vital statistics, which the Board will observe are favourable.

The following communicable contagious diseases were reported, viz.:

	Cases.	Deaths.
Diphtheria	27	1
Typhoid fever	10	2
Measles	51	0
Scarlet fever	8	0
Smallpox	1	0
Chicken-pox	7	0
Mumps	1	0
Whooping cough	2	0
Total	107	3

Last year there were 471 cases of communicable diseases recorded, with 33 deaths. In addition to the above there were reported 11 cases of tuberculosis and 20 deaths.

There were also 19 deaths from pneumonia. This disease still keeps among the front ranks of the fatalities.

Still and premature births were accountable for 38.

Thirty-eight children under one year of age died, also 14 under five years of age.

Of the 10 cases of typhoid fever recorded, six were from the County, and as far as known, one, possibly two, contracted the disease in other parts of the Province.

The 51 cases of measles may be regarded as the winding up of the Province-wide epidemic of last year.

One case of smallpox was recorded. Prompt isolation and vaccination prevented its spreading. This was the first appearance of this disease since 1909 in this city. There were 86 houses fumigated and 71 houses placarded.

The total births were 607, as compared with 542 last year. There were 170 marriages, as compared with 247 last year. The total population is given as 19,078, as compared with 17,880 last year and 13,403 five years ago, showing progressive growth notwithstanding the war's drain.

Sanitation.

During the year there were constructed 6,332 feet of new sewers of various dimensions, together with 200 sewer connections made; all of which improves the sanitary conditions of the city and aids in reducing the death rate.

There were approximately 10,000 tons of garbage and other refuse removed from the limited area served by the present system.

There were also collected and disposed of 371 carcases of dead animals, not including the number handled by the police or by private citizens.

The present system of collecting and disposing of refuse matter is neither satisfactory nor economical. The area served should be extended.

The Isolation Hospital.

The Hospital is kept scrupulously clean and the management as satisfactory as the means available will admit.

Total number of patients admitted during the year, 27.

The total cost of the institution, as compiled by the City Treasurer, for the past year was $1,443.26. The revenue from all sources was $450.75. The average cost of each patient was $64.79. The average cost per day for each patient was $3.23.

The views expressed in former reports, recommending the adoption of a more modern and centralized system for the care of contagious diseases, are still held.

Military Examinations.

The experience gained through the military medical examinations should impress the general public with the deplorable fact that apparently nearly 70 per cent. of the young manhood of the country are physically unfit to defend their country and homes from foreign aggression.

The conditions revealed from these extensive examinations should receive the prompt and earnest consideration of all governing authorities.

Annual Report of Secretary.

I hereby submit my annual report from November 15th, 1916, to November 15th, 1917.

Attached to this report is a list of deaths and their causes during the year, also a summary of their ages at the time of death.

I also submit a list of diseases classed as contagious, as reported by the medical practitioners of the city, which shows only 117 cases as compared with 471 in 1916.

All premises where contagious diseases existed were promptly fumigated by the Sanitary Inspector.

Births reported: Male—326; Female, 300. Total of 626, an increase of 84 over 1916.

Marriages reported, 179, a decrease of 68 from 1916.

Deaths reported, 255, a decrease of 53 from 1916.

The population, as returned by the Assessment Commissioner for 1917, was 19,078, an increase of 1,161 for the year. Although the population has largely increased, the death rate has decreased, which shows the city to be in a healthy condition.

The sewer system has been extended, and more extension is contemplated.

Contagious Diseases Reported.

	Cases.	Deaths.
Diphtheria	27	1
Tuberculosis	11	19
Typhoid fever	10	2
Measles	51	0
Scarlet fever	8	0
Chicken-pox	7	0
Mumps	1	0
Whooping cough	2	0
	117	22

Number of births	626
Number of marriages	179
Number of deaths	255
Population, as returned by Assessor for 1917,	19,078

Age at Time of Death.

Still and premature	33
Under 1 year	43
1 year to 5 years	18
5 " 10 "	3
10 " 20 "	11
20 " 30 "	20
30 " 40 "	12
40 " 50 "	18
50 " 60 "	20
60 " 70 "	34
70 " 80 "	25
80 " 90 "	14
90 " 100 "	4
Total	255

Sewers Built.

122 ft. 24-inch Cast iron sewer.
1,190 ft. 72-inch Brick sewer.
2,829 ft. 60-inch Brick sewer.
1,189 ft. 54-inch Brick sewer.
486 ft. 30-inch Tile sewer.
523 ft. 24-inch Tile sewer.

200 Sewer connections made to private houses.

MEDICAL HEALTH REPORT FOR THE YEAR ENDING DEC. 31st, 1917.

	Cases.	Deaths.
Typhoid	28	3
Diphtheria	75	3
Scarlet Fever	5	0
Measles	172	0
Variola	5	0

ST. THOMAS, April 17, 1918.

There were also quite a number of cases of varicella, whooping cough and mumps. There were no cases of infantile paralysis or cerebro-spinal meningitis.

Of the 28 cases of typhoid fever, 18 were railroad men who contracted the disease, some in Windsor and at Montrose, and were treated here either in their homes or in the Amasa Wood Hospital. There were 3 deaths from this class in this epidemic. Several cases occurred from an infected milk supply. The farmer supplying the milk, who resided in Southwold township, his wife and two sons all contracted the disease. His wife died. Seven cases, some of them severe, occurred along the milk route. The Medical Health Officer of Southwold was notified and the milk prohibited from being sold in the city, and the epidemic ceased. There were no deaths in the city from this outbreak, although some of the cases were quite severe.

Two cases of the 28 were small children who contracted the disease by drinking water out of Kettle Creek just below the septic tanks.

A nurse in training contracted the disease in Amasa Wood Hospital.

Diphtheria was quite prevalent during the year, but generally of a very mild type. The antitoxin furnished by the Provincial Board was used freely both in the disease and for immunizing purposes with unvarying good results. The three cases that died had laryngeal diphtheria.

Of the 5 cases of scarlet fever, one was a student from Ann Arbor University who came home broken out with the disease. Three cases contracted the disease outside the city. In one case the source of the disease could not be found.

During the last six month of 1917, measles prevailed to a large extent in the city. Placarding prevented a general outbreak. The 175 cases were made up to a great extent by one case in a home infecting the other children, also by cases being brought into the city who had contracted the disease in other municipalities.

Three of the cases of smallpox contracted the disease in Michigan (two of them in Detroit). The origin of the other two cases could not be found.

This record of contagious diseases in St. Thomas for 1917 is very fair, considering the many facilities for the spread of these diseases owing to its being a large railroad centre and a large per cent. of the population being railroad employees whose employment takes them out of the city to other large centres.

Milk and meat inspections were made regularly during the year, and a good supply of pure clean, unadulterated milk was furnished to the citizens.

D. A. MCKILLOP.

Medical Officer of Health.

WINDSOR.

C. R. Cruickshank, M.O.H.

Report of Chairman (J. Wilbert Brien).

I have the honour to submit for your information and consideration the annual report of the Medical Officer of Health of the city for the past year, which is so full and comprehensive that I feel that any formal reference that herein could be made to the work of the Board would be superfluous and not requisite under the provisions of the Health By-law. Suffice it, therefore, to add that the proceedings of the Board have throughout the past year, as in 1916, been marked by unanimity and a strong desire to protect the inhabitants by every available means from the inroads of disease of whatever nature, but especially from such as may be communicated from one patient to another; and it is believed that the inhabitants of the city as a whole will readily award the Board the credit of exercising the power vested in it with a minimum of inconvenience to afflicted families.

Appended hereto is the statement of the Secretary, under proper headings, of the number of communicable diseases reported at the Health Office during the year, and the number (if any) of the deaths resulting therefrom.

Report of Secretary (M. A. Dickinson).

The city record of communicable diseases for the twelve months ending to-day is as follows:

Disease.	Cases Reported.	Deaths.
Smallpox	10	0
Scarlet fever	103	0
Diphtheria	248	16
Measles	95	0
Whooping cough	4	0
Typhoid fever	23	11
Tuberculosis	37	27
Infantile paralysis	0	0
Cerebro-spinal meningitis	5	5

Revenue and Expenditure.

Annual appropriation by City Council	$9,350 00
Disbursements to date	9,903 35

Report of M.O.H.

I beg to submit my annual report for the year ending November 15, 1917.

Births and Deaths.

There were seven hundred and sixty births in Windsor last year, and four hundred and thirteen deaths.

Infant Mortality.

One hundred and fourteen died during the first year of life, and in all one hundred and thirty-five during the first three years of life. There were one hundred and twenty-two deaths last year, and one hundred and five the year before, in infancy.

Infant Welfare Work.

It will be noticed that about one-third of all our deaths occur in infancy. If we would cut down this percentage we must institute Maternity and Infants' clinics. Our infant welfare work has not been systematic nor extensive. During the hot weather

in the least hygienic part of the city our nurse visited as many babies as possible and gave what help she could. This is one of our most urgent problems and is linked, of course, with the milk question.

Our Milk Inspector and pasteurizers are helping, but to have milk properly cared for in the homes is a very difficult problem.

Contagious Diseases.

Disease.	Cases Reported.	Deaths.
Smallpox	8	0
Scarlet fever	96	0
Diphtheria	223	16
Measles	99	0
Typhoid fever	25	8
Tuberculosis	37	27
Infantile paralysis	0	0
Cerebro-spinal meningitis	4	3

Smallpox.

Eight cases, no deaths.

Our intimate relation with Detroit exposes us to the disease. Fortunately our children are practically all vaccinated before going to school, so that the disease does not spread.

Our smallpox hospital was destroyed by fire, so that it is difficult to care for the afflicted, and very expensive to them as well as to the city.

Scarlet Fever.

Ninety cases, no deaths.

The mildness of the outbreak made it difficult to diagnose and was the cause of much heart-burning to those whose liberty was curtailed and whose savings were wiped out by quarantine. How much would each case cost some citizen in actual cash, not to speak of other losses and annoyances, not for his own good, but for the welfare of his fellow citizens? Till we have an Isolation Hospital there is no means of lessening the burden, and the unfortunate must not only pay for their own trouble, but must also bear the expense of quarantine, which is not for their own benefit but for their neighbours.

Diphtheria.

Two hundred and twenty-three cases and sixteen deaths.

This is one of the worst records in the Province. Our relations with a large city constantly expose us to contagion, and we must do better next year. Seventy-five per cent. of diphtheria cases have no membrane, so that we must depend for our diagnosis on the laboratory. This disease is spread by carriers, many of whom feel perfectly well.

Efforts to Detect and Limit Contagious Disease.

Teachers send to the School Doctor everyone with a sore throat or suspicious symptoms. School Nurses examine systematically all children and send all suspected cases to the School Doctor for examination, and send throat swabs of all exposed, to the laboratory. When a case is reported, the Nurse at once proceeds to the school-room of the child and examines all children exposed, makes swabs of all throats and sends them to the laboratory, visits the homes of absent children for examination, and notifies the School Doctor of suspicious cases.

Rules for Quarantine.

1. The patient must be placed in a room by himself and kept away from the rest of the family till released by the Health Officer. Remember, a patient may be well and still contagious.

2. Everyone in contact with the patient is quarantined. No one is to be taken to another house without our consent. If removed to another house he will still be quarantined till released by the Health Officer. With diphtheria no one is permitted to change residence until a negative report is received from the laboratory.

3. Attendants must wear a special gown during all intimate personal service to the patient, and must wash or disinfect their hands after every contact with the patient. This gown must not be touched by others.

4. None of the household is allowed on the street without consent of the Health Officer.

5. In diphtheria, the attendant and all the children must be immunized by antitoxin, which is furnished free of charge by the Provincial Board of Health.

6. The Health Department considers the following diseases contagious during the incubation stage, i.e., before symptoms of the illness appear: typhoid fever, paratyphoid, cerebro-spinal meningitis, whooping cough, so that all exposed to these diseases during the incubation stage are to be isolated.

Release from Quarantine.

On request for release a Sanitary Inspector will investigate and report to the M.O.H.. If it is concluded that quarantine should be removed the Board of Health nurse will explain the steps necessary and personally supervise the disinfection, or call again and be thoroughly satisfied that all directions have been carried out.

1. *Persons.*—The patient and all those who have come in contact with him must take a complete antiseptic bath as directed by the Board of Health nurse, with particular attention to the hair and finger-nails.

2. *Clothing.*—All clothing, where possible, must be boiled at least half an hour; clothing that cannot be boiled must be collected and treated as directed by the Board of Health nurse.

3. *Rooms.*—All rooms which the patient has occupied or entered must be thoroughly scrubbed with hot water and soap, or other detergent, as directed by the Board of Health nurse, and when considered necessary the walls and ceiling must be repapered and kalsomined.

4. *Carpets, Rugs and Furniture*, when possible, shall be boiled or wiped with hot water and antiseptic, as directed by the Board of Health nurse, and every article in the exposed rooms must be removed from the house and placed in the sunlight for at least three hours. Direct rays of the sun make the most efficient disinfectant known.

5. *Fumigation* has been given up in many cities, but for a time we will continue it. Every opening in the fumigated room must be closed, all cracks and crevices plugged, and all articles opened up to the fumes.

6. Until all directions of the Sanitary Inspector and nurses are carried out to the satisfaction of the Health Department, quarantine will not be removed.

7. *School Certificates.*—A certificate from the family physician that a child "has been ill with (naming the disease), which is a non-communicable disease," will be accepted by the teacher. Where the disease is contagious the certificate is issued by the M.O.H.

Measles.

Ninety-nine cases were reported. This shows a growing disposition to register these cases.

Tuberculosis.

Thirty-seven cases were reported, and twenty-seven deaths.

Hitherto we have had more deaths than cases reported. Most of these cases reported came from our tuberculosis clinic, which is held every Thursday afternoon in the Labelle Block, by Dr. Flock, of the Sanitarium. The citizens of Windsor will never fully appreciate this wonderful work for their welfare. Sub-normal children are sent from the schools; others are sent by physicians. During the last six months, sixty-eight were examined; thirty-seven reported to the authorities as advanced cases. The Board of Health nurse who assists at the clinic visits, to keep as sanitary as possible, the homes of those who do not go to the sanitarium. *Every residence in the city should have an out-door sleeping-room, the use of which would give the greatest benefit to everyone sub-normal from almost every cause.*

Typhoid Fever.

Twenty-five cases were reported, with eight deaths; but twelve of these, with five deaths, were brought from outside municipalities for treatment, leaving thirteen cases and three deaths in Windsor. Evidently all our cases have not been reported; the percentage of deaths is too high for the number of cases.

We cannot impress too strongly on the Water Commissioners the danger of imperfect chlorination. With the present system of liquid chlorine carefully carried out there should be no cases to report next year.

Infantile Paralysis.

Infantile paralysis, which caused us so much trouble last year, was completely absent this year, but we had four cases of epidemic cerebro-spinal meningitis and three deaths. Our prompt and strict quarantine limited this to the playmates of two families.

Food Inspection.

During the year over sixteen tons of food have been condemned and destroyed because contaminated with tuberculosis, septicæmia, gastro-enteritis, pneumonia, hog-cholera, abscesses, poly-arthritis, peritonitis, immaturity, decomposition, etc., and dairy products for bacterial pollution and contamination acidity. The Inspector kept a close watch on dairies and has made many analyses of milk. Our milk compares favourably with that of any city in Canada. He complains of the filth of the slaughter-house and recommends a public abattoir.

Isolation Hospital.

In spite of our efforts we have had too many cases of contagion. This has been owing to the mildness of many cases which were overlooked, and no doubt to the concealment of some who dreaded the consequences of quarantine.

If we had an Isolation Hospital so attractive and so well equipped that there would be fewer deaths than in the homes, we might avoid this. Citizens voted down a proposal for an Isolation Hospital because of expense. There were two hundred and twenty-three cases of diphtheria and sixteen deaths. If we figure the loss of time of bread-winners as well as the cost of nursing and medical treatment at one hundred dollars a case, the cost to our citizens would be twenty-two thousand three hundred dollars for diphtheria alone. This would build a good hospital.

Plumbing.

Three years ago the Board of Health reorganized the plumbing, making it necessary, in addition to inspection, that plans of all plumbing and drains were to be filed in the City Hall. This work has now been taken over by the Building Inspector.

Nuisances.

Seven hundred inspections of nuisances were made and corrections ordered. Seventeen offenders were brought to the police court for violation of the Public Health Act and each one found guilty. Thirty owners were compelled to instal sanitary conveniences, and fourteen were installed by the Board of Health according to the Act, to be paid for with the taxes. Next year we expect to have sewer accommodations in every home.

WOODSTOCK.

ANDREW MACKAY, M.O.H.

I herewith submit my annual report of the Health Department of the City of Woodstock for the year ending 15th November, 1917.

Number of births during the year, 186.

Number of deaths registered during the year, 139. Of these 16 were still-births and 17 were deaths of non-residents who came into the city for treatment, leaving 106 as the actual deaths of residents. This gives a death rate of 10.5 per thousand of the population; the population of the city being 10,027, as shown by the last assessment.

Deaths were due to the following causes, viz.:

Still and premature births	16	Gangrene	2
Pneumonia	11	Apoplexy	5
Old age	16	Heart failure	4
Disease of brain	4	Cerebral meningitis	3
Septicæmia	2	Accidents	10
Heart disease	4	Appendicitis	2
Typhoid	2	Hemiplegia	2
Tuberculosis	6	Cancer	7
Splenic anæmia	3	Malnutrition	2
Convulsions	4	General debility	2
Bright's disease	4	Arterial sclerosis	2

and one each of the following: sclerosis of liver, diabetes, paralysis of heart, la grippe, stenosis of pylorus, neurasthenia, spinal sclerosis, bronchitis, intestinal obstruction, pulmonary hemorrhage, asthma, disease of kidneys, alcohol poisoning, ulcerative endocarditis, rheumatic endocarditis, angina pectoris, inflammation of the liver, diarrhœa, septic peritonitis, dropsy, paralysis, pulmonary abscess, cerebral hemorrhage, congestion of the lungs, pernicious anæmia, endocarditis.

The deaths occurred between the following ages:

Still and premature	16
Under 5 years	10
From 5 years to 10 years	4
" 10 " 20 "	1
" 20 " 30 "	5
" 30 " 40 "	8
" 40 " 50 "	9
" 50 " 60 "	9
" 60 " 70 "	28
" 70 " 80 "	31
" 80 " 90 "	15
" 90 " 100 "	3

COMMUNICABLE DISEASES.

Disease.	1916.		1917.											
	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	Total.
Typhoid	1	5	....	....	....	....	....	....	....	1	3	9	1	20
Mumps	2	8	3	27	11	2	7	....	2	....	....	....	....	62
German Measles	4	17	64	69	44	7	4	....	5	....	....	1	....	215
Scabies	1	....	....	....	....	....	....	....	....	....	....	....	2	3
Tuberculosis	....	1	1	....	....	3	1	....	2	1	....	....	....	9
Chickenpox	....	9	15	16	5	5	....	....	....	....	1	....	1	....
Erysipelas	....	1	....	....	....	2	....	....	....	....	....	....	....	3
Measles	....	5	....	....	....	....	....	....	....	....	....	1	11	17
Whooping Cough	....	....	1	....	....	....	....	....	....	....	....	....	1	2
Diphtheria	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Impetigo Contagiosa	....	....	....	1	....	....	....	....	....	....	....	....	1	2
Scarlet Fever	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Totals	8	46	84	115	60	19	12	....	9	2	4	11	18	388

Milk Supply.

Monthly tests of the milk have been made during the year. The samples for testing are taken from the producers' cans before being emptied at the dairy; a sample is also tested from a dairy conveyance.

The butter fat has been usually above the standard required. Some samples from the producers' cans still contain much sediment. The sediment is removed at the dairy, where the milk is filtered and pasteurized before being bottled. The Board insists on keeping the sediment out of the milk, and not removing it after it often taints the milk.

The Woodstock Dairy Company have installed an up-to-date plant for pasteurizing and handling the milk.

The members of the Board visited the dairies supplying milk for the city, and found them, in the majority of cases, well kept.

Meat Supply.

The Board made a couple of inspections of the slaughter-houses supplying meat for the city; a few of them were found in very unsatisfactory condition.

We have had reason to complain of the condition in which the market stalls and equipment of the farmer butchers have been kept during the year.

The number of typhoid cases occurring this fall was larger than usual, but, in nearly all, the local conditions accounted for the disease.

There are many earth closets still in use, even in the thickly settled parts of the city; they are a nuisance and menace to the surrounding people. Many objectionable ones have been removed during the year.

I have to express my regret at the departure of our Chairman, Mr. Fielden Crossley, from the city. He was a highly respected and useful citizen as well as a valued member of the Board of Health.

I thank the members of the Board for their co-operation in carrying on the work of the Board during the year.

AMHERSTBURG

T. James Park, M.O.H.

In presenting my report for the year 1917, I will state that during the first part of the year we had a number of cases—measles, mumps and typhoid, and a couple of scarlet fever cases. Fortunately no deaths. You will remember his Worship the Mayor was a patient with a severe attack of typhoid fever.

In the month of May the inspection of the town began, and continued every month, with an improvement of the sanitary condition. In the month of June two cases of smallpox developed. I took immediate precautions and strict quarantine of the houses, and vaccinated those exposed. These persons had never been vaccinated. Had samples of water tested by Provincial Board of Health, and the reports came back that they were polluted with the bacilli colon, which showed itself by the number of typhoid cases, in spite of the repeated warnings and public notices to boil all drinking water. I strongly advise everyone to take the anti-typhoid vaccine treatment. Typhoid can be driven from here by the typhoid inoculation.

I am glad to know that we are in sight of a pure water supply, which is of such vital importance to the town, as a money value cannot be placed on human life. Negotiations are now going on by the town authorities and the Bromer Mond Canada, Ltd., which company has now under construction here an immense plant which will employ a great number of men. If negotiations are successful the Bromer Mond will supply a pure grade of treated water to the residents of the town.

I will urge the sanitary connections of all outside toilets that are on streets with sewers, and the thorough sweeping of all paved streets, and kept clean and neat all seasons of the year; and a milk by-law must be passed.

BARRIE.

A. T. Little, M.O.H.

I beg leave to present the Medical Officer of Health's report for the year 1917, which no doubt will be satisfactory to your honourable body. It shows that the public Health has been well looked after by your Health Officer, and my duties as Chairman have been very light because of your very efficient Sanitary Inspector, who has been very active in the discharge of his duties. I think he has done everything in his power to keep the municipality in as sanitary condition as possible.

It is also very gratifying to know that the expenses this year are very much less than last year.

Expenditures.

Medical Officer of Health	$225 00
Sanitary Inspector	528 33
Sanitary Inspector—substitute	15 00
Isolation Hospital	164 52
Supplies—drugs	106 45
Printing	7 00
Legal	20 00
Telephone	15 40
Miscellaneous	16 55
	$1,098 25

Medical Officer's Report.

My report on the sanitary condition of the municipality for the year 1917 is as follows:

Births	181
Deaths	171
Deaths from contagious diseases:	
Cerebro-spinal meningitis	1
Tuberculosis	4
Cases of contagious diseases reported:	
Scarlet fever	21
Measles	28
Diphtheria	2
Typhoid fever	14
Cerebro-spinal meningitis	1

We have had an increase in the number of typhoid cases over that of previous years. The infection came, no doubt, from our milk and cream supply, and until a pasteurization plant is established and all milk and ice-cream vendors compelled to have their milk treated before delivery, we will be subjected to this danger. Our larger cities safeguard the public in this way and have very little typhoid to contend with. Pasteurization has already been recommended by your Board, and if the vendors cannot agree among themselves as to the ways and means, the municipality should insist on their carrying out this much needed reform in handling milk.

Certain cesspools in the 6th Ward have been condemned and their owners instructed to have them done away with, and either to make sewer connections or revert to the use of the dry earth closet. On sanitary grounds the council should be recommended to extend the sewer system to afford accommodation for this purpose.

Several houses have been placarded as unfit for habitation until the owners have them put in sanitary condition.

Your inspector has been ordered to make monthly inspections of all slaughter-houses, butcher shops, bakeshops, restaurants, ice-cream parlours, etc., and to file his report of same with the M.O.H. This has been done.

From repeated analysis of the town water it has always been shown to be absolutely pure. Waters from many wells in the municipality have been found to contain "colon bacilli." The owners were compelled to sink new wells or connect up with the town waterworks system.

The statutory number of meetings of the Board has been held during the year.

BROCKVILLE.

A. J. Macauley, M.O.H.

Herewith you will find the annual reports of the Medical Officer of Health, Secretary of the Board, and Sanitary and Veterinary Inspectors.

It is a matter for congratulation that the labours of the Board during the past year have been very light. The cases of contagious and infectious diseases, other than measles, were very few in number.

The burdens necessarily imposed by the war have rendered the installation of a filtration plant for the present impracticable, but every precaution is taken to make the water wholesome. Frequent tests of the water show that the chlorination process eliminates the harmful bacteria.

The milk appears to have risen both in quality and in price, but it is said not to be out of proportion to the rise in prices of other kinds of food.

The Vital Statistics show that the births are keeping well ahead of the deaths.

From a public health point of view, the condition of the town is quite satisfactory.

Report of M.O.H.

In this my annual report I beg to submit the following:

Of typhoid four cases were reported, with one death, this occurring in a young man employed on the Grand Trunk Railway, and while his family lived here he spent the greater portion of his time on the road, drinking water from different places along the line; the other three lived here, but during the summer were much on the River St. Lawrence, the water from which is always dangerous here when untreated.

The water supplied by the town is safe (barring accidents to the chlorination plant), wells are generally used, although the people have been repeatedly warned of their danger, some having the idea that the water when treated is injurious to them.

We have had seven cases of diphtheria, with two deaths, much too high a death rate, which should and would be lower if we had an isolation hospital in general use.

Of scarlatina we have had one case, with no death; measles, twenty-seven cases, and varicella one, with no death.

We have had nine deaths from tuberculosis, not one of which was reported, despite frequent requests, until death occurred.

The sewer system has been extended during the past year, and sewer connections are being made as rapidly as the plumbing can be done.

The collection of green garbage has been satisfactorily done, also the other garbage; the difficulty with the latter is that it is not always dumped at the public dumping ground; this is evidently caused by someone exceeding his authority and giving carters and others permission to dump it elsewhere.

The milk supplied the town has been of good quality, clean and cool, but the number of vendors is not nearly as great as in former years.

Our Isolation Hospital, burned last winter, is being repaired, and I hope soon to see it ready for the reception of patients.

WILLIAM BURKE, SANITARY INSPECTOR.

I herewith submit my report for the year ending October 31st, 1917.

The number of contagious diseases reported is as follows:

Typhoid fever	4
Diphtheria	7
Scarlet fever	1
Measles	27
Chicken-pox	2

Quarantine was established when necessary, and premises fumigated as required.

The houses on the streets on which sewers have been recently constructed are being generally connected with the system.

Forty-four samples of milk were collected from the several vendors for examination and testing by the Medical Officer of Health.

The butcher shops and bakeries have been inspected from time to time and found clean and sanitary.

The garbage collecting system is working efficiently.

D. MCALPINE, VETERINARY INSPECTOR.

I beg to submit this my annual report for the year ending October 31st, 1917.

The live stock in this district are at the present time free from anything of a contagious nature.

Since our last annual meeting we had one outbreak of hog cholera; this was taken charge of by the veterinaries of the Federal Department of Agriculture, and by rigid enforcement of the regulations of the department was confined to the one premises. No cases have appeared since.

The dairy cattle have materially increased in value during the year owing to the greater demand for dairy products, in their various forms, for export; the better prices received for these products is having some effect in improving the conditions under which the cattle are kept, fewer cows were removed from the herds this year than in any of the former inspections, and there has been less complaint with regard to the milk supply.

With reference to the slaughter-houses, they are being used less each year, they have the necessary appliances for carrying out the provisions of the by-law with regard to the cooking of offal, and the regulations are being closely observed.

I have investigated several complaints with regard to the offerings of meat and fowl on the market; in some instances the complaint was well founded, the produce being unfit for food. These complaints were made either by the purchaser or through the Police Department.

GEO. K. DEWEY, SECRETARY.

I beg to submit the following report for the year ending October 31st, 1917.

The number of births registered during the year is 253, of which 135 were males and 118 females.

The number of deaths registered as having occurred in the town is 204, of which number 43 were of persons resident in other municipalities and brought here for treat-

ment, making 161 deaths of persons resident in Brockville, being about 17 per thousand of the population; of this number 77 were males and 84 females. Of the total number of deaths 25 were still-born, 26 under the age of one year, 7 between the ages of 1 and 5, 9 between the ages of 5 and 20, 26 between the ages of 20 and 40, 34 between the ages of 40 and 60, and 78 over 60 years of age.

Samples of water to the number of 33 from the well at the pumping station and service taps, 23 from the intake pipe, and 17 from private wells have been sent to the Provincial Analyst for examination.

The returns required by the Provincial Board have been regularly sent to the Department.

BURLINGTON.

DR. A. H. SPEERS, M.O.H.

I herewith present the annual report of the Board of Health for the Town of Burlington for the year 1917.

Up to the present time there has been no serious outbreak of any of the contagious diseases.

There have been reported six cases of diphtheria, three of which have been laryngeal diphtheria or membraneous croup. Sixteen cases of measles have been reported, eight cases of whooping cough, and three cases of scarlet fever, it having made its entrance into the town at the present time. Adequate precautions are being taken against its spread.

We again feel gratified that during the year there have been no cases of typhoid fever in our town.

As regards nuisances, each nuisance complained of has been promptly investigated by either the Sanitary Inspector or Health Officer and a satisfactory adjustment has been made.

An inspection of the premises of the several milk vendors supplying milk to the town was made, and on the whole were found to be in a satisfactory condition and endeavouring to conform to the regulations of the milk by-law of the town.

The milk is collected from the various farmers by one milk vendor, and nearly all milk supplied is pasteurized before being distributed.

Frequent analysis has been made for butter fat, solids and dirt by Mr. Strong, district representative, and reports have always been satisfactory.

The sewerage system, which was started in the year 1915, is nearing completion and is in operation, a goodly number of the residents having connected up, and I have no doubt, when entirely completed, will give general satisfaction.

The water supply has been tested regularly throughout the year, samples being sent to the laboratory of the Provincial Board of Health, and at no time was the water found to contain impurities sufficient to be at all dangerous.

During the year a mad dog ran at large, biting three children. The head of the dog being sent to Toronto, the brain was found to contain the negri bodies diagnostic of rabies. Immediately the three children were sent to Toronto for the Pasteur treatment.

Nothing has been done with the introduction of a garbage by-law; apparently the Council have been busy with other and weighty matters.

The butcher shops are visited at intervals, and have been found to be in a sanitary condition.

The Health Officer has made inspections of the pupils attending the Central and East End schools twice during the year—in June and December. The scholars were examined for diseased teeth, diseased tonsils and adenoids, which work has been voluntary on the part of the Health Officer. While it has not been made compulsory to have these attended to, it has had a valuable educative effect, and we note a marked improvement in the condition of those children that have had these matters attended to.

COBALT.

DR. T. C. MCLAREN, M.O.H., R. L. O'GORMAN, SECRETARY.

Your Local Board of Health for the Town of Cobalt for the year 1917 beg leave to report as follows on the activities of the Board and of the Medical Officer of Health during the present year.

So far as the general health of the people has been concerned, another good year has been experienced by the health authorities. There were very few cases of contagious diseases, and all of these were confined in each case to the houses in which they originated. There were one or two cases of typhoid fever during the year, the origin of which it has been impossible to ascertain.

The old system of scavenging, whereby the scavenger made a specific charge against each householder or place of business, was discontinued from April 1st, 1917, and a new system, whereby the scavenger took on the responsibility of doing all scavenging work in the town according to By-law No. 335 and received all his remuneration from the municipality, was inaugurated from that date. The contract price for this work was $581.00 per month for the removal and destruction of garbage and night soil, except that he received the sum of $6.00 a day additional during such times as he operated the town incinerator.

While at first difficulties were encountered in the operation of the new system, partly through heavy storms, partly on account of the roadway to the incinerator being poor, and partly for other reasons, it was subsequently found that the new system worked out with reasonable satisfaction.

The water supply of the town, while at times it showed evidences of pollution, was never so contaminated that it became necessary to condemn it.

With a view to minimizing the causes of contamination your Board caused certain houses which in its opinion were too close to the lake to be closed, and the Medical Officer of Health is in hopes that this action will be the cause of remedying any such conditions.

Although all the lakes which comprise the source of water supply to the town are not within the town limits, the Local Board, with the assistance of the Cobalt Water Commission, acquired from the Ontario Government during the year certain specific rights to govern the sanitary conditions in and about these lakes, and we believe that these powers will enable the Board to provide very material protection for the town water supply.

In conclusion we wish to report that the Board of Health held six meetings during the year.

COBOURG.

Dr. G. H. Field, M.O.H.

I have the honour to submit herewith my report for the year 1917, which will, without taking up too much time or space, give you a synopsis of the health conditions of Cobourg for the year that has just passed.

We have been singularly free from contagious disease during the past twelve months, and with the exception of three or four cases of diphtheria, some few cases of mumps, and four cases of scarlet fever, we have enjoyed an immunity from these scourges of the first few years of life.

No deaths from such diseases have been recorded.

In the matter of typhoid fever, never in the history of the town have we had such a year, there being only six cases of this disease recorded, with no deaths; and we must congratulate ourselves upon this fact, which shows that with our sewage and water systems on a sanitary basis we have at last achieved an enviable position in this respect.

Typhoid fever is the index of the sanitary status of any municipality, and looking back on our record for 1917 we would appear to have achieved that most desirable state where we can consider typhoid fever a negligible disease as far as Cobourg is concerned.

During 1917 there were in the town of Cobourg 88 deaths, 52 marriages and 91 births.

This includes the death returns from the House of Refuge, where, owing to the age of the inmates, who come from all over the county, there is to be expected quite a mortality.

With the Cobourg Asylum and House of Refuge both in active operation here during 1916, the total number of deaths was 100, or 12 more than this year, which discrepancy is to be accounted for by the changing of the Cobourg Asylum into a Hospital for Returned Soldiers, where the death rate would naturally be much lower.

As a matter of fact only one death at the Cobourg Military Hosiptal is recorded for the year 1917.

After deducting all extraneous and institutional deaths, we have left for the town of Cobourg a practical death rate of 1.5 per 1,000, which reflects most creditably upon the health conditions of the town.

In the matter of tuberculosis I am glad to report a most marked improvement in the statistics, as during the twelve months of 1917 only one death from pulmonary tuberculosis is recorded, which is highly gratifying, indicating, as it does, a very marked improvement over prevous years.

During 1916 we had five deaths from this cause. With conditions and with our improved lighting with incandescent lamps, properly spaced and placed, we have much to congratulate ourselves in the outlook for 1918, and in spite of the adverse circumstances imposed by the great war which has so disorganized all natural and normal conditions, we, in the old town of Cobourg, must say that, besides sending so many of our loyal citizens to the front to battle for what is right, have been able to keep the flag flying here as well, and to not maintain but to improve the sanitary and hygienic condition of the town.

The Cobourg Hospital has done excellent work for the year and has been a great boon to the military forces being recruited when acute illnesses have stricken down here and there some member of the Cobourg Heavy Battery drafts or the other units stationed in the town.

During the four years of the war, with all the various units and battalions, etc., raising men here, only one death has occurred at the Cobourg Cottage Hospital among these men recruited who have been under treatment at that institution.

In the matter of garbage disposal and the erection of an isolation hospital, I would again urge the necessity for these things and would recommend that the Council take these matters up at their earliest convenience, as both would facilitate the handling of sanitary matters in Cobourg.

I wish to thank you for your hearty support and consideration during the past year, and trust that this report will meet with your approval and endorsation.

CORNWALL.

Dr. J. C. Hamilton, M.O.H.

I beg to submit herewith the annual report of the Medical Health Officer of the Town of Cornwall for the year 1917, as required by the Public Health Act.

After the inauguration of the Board, the Municipal Council, at its first meeting, saw fit, on the recommendation of the members, to arrange with two of the policemen to act as Sanitary Inspectors, and from the fact that their duties require them to be practically over the whole municipality, their dual position of policeman and Sanitary Inspector affords them a first-class opportunity of making at all times a very thorough inspection of the sanitary condition of the town.

In the early months of the year the town was visited by a very general attack of measles, many of the cases being brought into the municipality by the military men who had been recruited and stationed within the municipality. Nearly all these cases were quarantined in a military hospital, and in no way conflicted with matters of health in connection with the Town.

We had, also, in the early months of the year, a very general epidemic of whooping cough, necessitating, as the members of the Board will remember, the closing of the schools for a few days. Although many of these cases were reported to the Medical Health Officer, I feel that a great number were concealed, and, therefore, the epidemic was longer in its subsidence than otherwise would have happened.

Diphtheria, also, showed itself very freely in some 20 or 30 cases, but with the exception of three or four fatal cases, the balance recovered without any ill effects.

Typhoid fever numbered some 10 or 15 cases, with three deaths. The majority of these cases came from without the municipality, and were not due to any infection which might have been caused by improper drainage, or other unsanitary conditions of the town.

In the month of August there was a very sharp, but local, epidemic of infantile paralysis, some ten cases in all, and with the exception of two cases, the disease was confined to a small area of the town in the East End. There was but one fatal case, and that in an adult, the balance recovering, and in some cases the paralytic symptoms were greatly improved. It is, however, yet too early to say whether the paralytic symptoms will entirely disappear.

In all these contagious cases, strict quarantine and placarding, with subsequent thorough fumigation, were very carefully carried out.

The water system of the town has, as in former years, been increased in its area, as also the sewerage system, extending these comforts more generally to the citizens.

The Board of Health also took up the matter of the storage of hides, compelling all persons, before storing hides, to have the place inspected and a permit granted to the party wishing to establish such a place.

With the exception of one case, all have complied with the requirements of the law. Unfortunately, in this single case, after using all reasonable means to persuade the party to comply with the law, I was obliged to lay an information against him before the police magistrate for the infraction of the by-law, causing him to be fined $100.00 and costs.

I regret exceedingly having had to resort to this measure, but the place was a perfect nuisance and the citizens complaining bitterly, and I felt that I had no alternative.

I also wish to express my appreciation of the manner in which the local medical men have aided me in carrying out the provisions of the Health Act by careful notification of all cases of contagious diseases. Taking into consideration the number of cases of contagious diseases which have appeared in the municipality during the year, I feel that I can safely say that we have been more than fortunate as far as fatalities are concerned.

As in former years, I must again draw the attention of the Board to the fact that the Municipal Council have not seen fit to provide an Isolation Hospital. If such were provided, it would be much easier to cope with the epidemics as they present themselves.

The Provincial Board has continued to furnish the Medical Health Officer with all kinds of serum for the treatment of the various contagious diseases, and has instructed him to supply the medical men with all that they require, and as they are furnished to the municipality free of charge, they have greatly diminished the expense to the citizens, particularly amongst the poor, of the proper treatment of the various contagious diseases.

The Public School Board have instituted a thorough system of inspection of the pupils by a trained nurse, acting in conjunction with the Victorian order. This has been the means of bringing before the parents of children the various throat and other infantile troubles to which children are liable, and of giving them an opportunity to consult their family physician and have such treatment carried out as would in the beginning be most serviceable and beneficial to the child.

At the beginning it met with slight opposition, but as parents realize the benefit of this work they are beginning to appreciate it more thoroughly, and in time it will be the means of greatly improving the health of young children attending the schools.

Summary of Contagious Diseases.

	Cases.	Deaths.
Diphtheria	25	4
Typhoid fever	10	3
Measles	20	0
Whooping cough	30	0
Mumps	2	0
Infantile paralysis	10	1 (in an adult)

COCHRANE.

J. A. R. Biron, M.O.H.

The sanitary state of the town of Cochrane has been, in general, very good, during the course of the present year. Accounting the circumstances in which the citizens were left after last year's great conflagration, a great number of them having been unable to construct anew with all required accommodations, notwithstanding this the public health has not suffered in the least, as the following statistics give evidence:

January 15.—One case of diphtheria, the only one during the whole year.

March 21.—One case of meningitis, isolated and non-classical case.

From June 19 to July 26.—Seventeen cases of measles. The disease, occurring at a favourable period, was easily controlled and all complications avoided.

We had two cases of typhoid, one being diagnosed a few days after the arrival of the patient into Cochrane. The other was an ordinary case.

After analysis, the water of our aqueduct has proved to be a safeguard to the population. If the hygienic conditions of Cochrane are to be found thus, it is due to the co-operative work of the local Board of Health, greatly supported by the Municipal Council and the incessant labour of Dr. Fraser to assure the public health of the citizens of this locality.

FORD CITY.

DAMIEN H. PIERCE, M.O.H.

Beg to report number of communicable diseases for the year ending November 30th, 1917.

Disease.	Cases.
Smallpox	1
Scarlet fever	2
Diphtheria	9
Measles	5
Typhoid fever	6

Enclosing herewith annual report of the Medical Officer of Health.

Annual Report of the M.O.H.

The sanitary condition of the town of Ford City, notwithstanding the fact that the municipality has been yet unable to secure a proper sewerage system, is satisfactory.

Dairies.

The dairies within the limits of the town are in good condition. Two of them who did not care to comply with the regulations last year have been ordered to discontinue at once selling milk.

Meat Shops.

Owing to a proper scientific meat and food inspection done under the immediate supervision of Dr. Bowman, the regular meat inspector for the district of Windsor, the public is closely safeguarded as to eatables.

Garbage.

The garbage problem, viz., the disposal of garbage, presents certain difficulties, this being due to the difficulty of securing a proper place to dispose of the vegetable matter. However, steps are now taken to come to an agreement with the neighbouring municipality for the use of the incinerator of the town of Walkerville.

Schools.

Introducing the school nurse inspection has been shown to be a successful proposition. In fact children are now more careful and understand the importance of cleanliness. Epidemics of whatever nature fortunately are not to be registered during the past year.

At last, we still greatly desire to have a system of sewerage in order to protect the public, not only of this municipality, but of the neighbouring towns. With the constant increase of the population in spite of the lack of sewerage accommodation, we surely are exposed to outbreaks of contagious diseases. The public is very anxious to be assured of protection to that effect.

FOREST.

DR. C. A. PATTERSON, M.O.H.

During the year we have had no severe epidemics. Contagious diseases were reported as follows:

Disease.	Cases.
Scarlet fever	1
Mumps	5
Scabies	1
Measles	5
Diphtheria	15
Total	27

No deaths from any of the cases.

Deaths during the year as follows:

Bronchitis	2
Gangrene	1
Pneumonia	4
Apoplexy	3
Tuberculosis	4
Inflammation of bladder	1
Heart failure	1
Cancer—	
Of stomach	1
Of bowels	1
Of liver	1
Diabetes	1
Rheumatism	1
Accidentally killed	1
Total	22

Births during the year, 24.

During the year numerous complaints of a minor nature have been dealt with by your Health Officer, and conditions satisfactorily remedied. A number of visits were made at various times during the year to both schools, and inspections made. Both schools are in a splendid sanitary condition. Our School Nurse has made regular inspections once per month of the eyes, throat, teeth, etc., of the public school pupils, and all suspicious cases of any communicable disease reported to the Board. Numbers of children have had their tonsils, teeth, etc., attended to as a result.

The board held five meetings during the year.

Negotiations were entered into with the G.T.R., whereby conditions on their property detrimental to health are now being attended to by them. The regulations regarding manure and outside closets are being well kept.

The Provincial Engineer visited Forest during the year in respect to the sewage disposal of the canning factory and the flax mill. No change has as yet been made in these places.

During the year the Board has distributed some fifty or sixty diagnostic outfits, as well as about ninety doses of diphtheria antitoxin, one dose of tetanus, and a number of doses of pertussis vaccine and smallpox vaccine.

Some complaints regarding the milk supply were received, and samples of the milk were sent to Toronto for analysis and the condition remedied, it occurring with only one dealer who has not a bottling system, no trouble having occurred with the bottling system.

On the whole, beg to report the sanitary condition and health of the town good. Our population being about 1,800, and the number of deaths 22, it gives us a death rate of about 12.2 per 1,000, which is low in comparison with the average throughout the Province.

FORT FRANCES.

DR. R. MOORE, M.O.H., J. W. WALKER, SECRETARY.

The Local Board of Health make the following report for the year 1917:

During the year matters connected with the Board have run along in a normal course. The collection of garbage and refuse has been done in the same manner as formerly, by team owned and operated by municipality, material being taken to the incinerator and burned.

A number of water and sewer connections were made, but there are still many places not served by these conveniences, even where they are available.

Water tests were made at various intervals, and, while showing no serious trouble, the Department insists in every report that there must be no carelessness regarding chlorination.

Milk tests also made showed that while satisfactory in so far as butter fat was concerned, the cleanliness of the milk was not what it should have been. This point was strongly commented upon by the District Officer on his visit to the municipality.

The general health of the community during the year has been very good.

Below are given the statistics for the year as reported to the Secretary.

Months.	Scarlet Fever.	Mumps.	Measles.	Duke's Disease.	Tuberculosis.	Typhoid.	Smallpox.	Chickenpox.	Diphtheria.	Total.
January										
February	4	1								5
March	29	6	3	1	2					41
April	9	1	2							12
May	9	2	1			1				13
June	3		1				1			5
July			2			2		2		6
August			4							4
September			1							1
October			12						1	13
November			33							33
December			6			1				7
	54	10	65	1	2	4	1	2	1	140

Vital Statistics.

Births—(In municipality), 54 males, 47 females.
(In unorganized district), 4 males, 1 female.

Deaths—

Cause.	Number in municipality.	Number in unorganized territory.
Accident	5	8
Prematurity and other similar causes	14	2
Pneumonia	1	1
Tuberculosis	3	..
Tubercular peritonitis	1	..
Cancer	2	..
Gangrene (due to accident)	1	..
Meningitis	1	..
Cerebral hemorrhage	1	..
Acute laryngitis	1	..
Arterio-sclerosis	1	..
Dysentery, etc.	2	..
Bright's disease	1	..
Peritonitis	1	..
Nephritis	..	1
Quinsy	..	1
Apoplexy	..	1
Total	35	14

Marriages, 38.

GEORGETOWN.

DR. JOSEPH MCANDREW, M.O.H.

I am glad to be able to report that the year 1917 has been an exceptionally healthy one as far as Georgetown is concerned. There have been no epidemics whatever, and very few communicable diseases, and of these the majority of the cases were left-overs from 1916.

I am also pleased to report that several if not all our last year's suggestions have been carried out, namely, a more liberal watering of the streets, the passing of a milk by-law, the cleaning up and cultivating of the vacant lots, etc., all of which conduces to the good health of the community.

Of course, there have been some few complaints as to existing nuisances, but these have been immediately attended to and the sanitary conditions carefully looked after by the Inspector.

The following were the communicable diseases reported for the year.

January—10 cases German measles.
February—3 cases scarlet fever.
September—1 case diphtheria.
November—1 case diphtheria.
December—5 cases chicken-pox, 1 case whooping cough, 2 cases tuberculosis.

TOWNSHIP OF GUELPH.

DR. H. G. ROBERTS, M.O.H.

Your Local Board of Health beg leave to report as follows: The very unsatisfactory conditions at the City of Guelph Sewerage Farm, which existed at the time of making our annual report of last year, must, we regret very much to say, be featured again this year. The City Sewerage Farm and Filter Beds are, as they have been ever since their installation, a menace to the health of those living in the neighborhood of the river below that place. As the result of a conference held with the City Sewerage and Works Commission on November 20th last, attended by the whole of our Board, the whole question of the present system of sewerage disposal was gone into fully. On November 27th, 1916, the City Clerk wrote your secretary stating what they proposed doing in the way of improving their plant and filter beds, claiming no negligence on their part; asking the indulgence of the township authorities for a short time in order to perfect their arrangements, and assuring us that "Everything will be done in the meantime to make the present plant operate to the best possible advantage." In the meantime, on May 4th, conditions did not improve, and at a meeting of our Board we invited the City Board to accompany us on a visit of inspection that afternoon. Mayor Newstead, Chairman Kelly and Engineer McArthur accepted our invitation. On our arrival we found a large opening in the main sewer a short distance above the tanks from which the raw sewage was pouring out and spreading over the flats and finally finding its way to the river. The explanation offered for this opening in the main sewer was that it is a sort of safety valve to protect the plant in case of flood. This same flooded condition was found on many occasions during the season; in fact little or no effort seems to be made to prevent absolutely raw sewage from running direct into the river. On June 1st Mr. Jeffrey wrote the Board stating that he had been instructed by N. W. Buchanan to take such steps as might be necessary to protect his interests. City connections are still being made, thus increasing the flow of sewage to the tanks and beds and nothing whatever to provide better conditions and capacity to handle the extra quantity coming. The Buchanan complaint was temporarily withheld pending some action being taken by the Board, who seem either hopelessly dilatory or unable to deal with the situation. We have now come to a point when patience ceases to be a virtue, and unless some genuine effort is made by the City Board we will be compelled to take action in law to protect ourselves and the community we represent.

We regret having to take this step. Long and patiently have we borne up under this unneighbourly act until we do not propose to put up with being jollied along any further, and have been forced by the inaction of the City Board to assert and establish our rights.

In May a circular letter was sent to every householder in the township through the medium of the schools, asking their co-operation in the matter of a general clean-up on their premises to ensure better sanitary conditions in the township.

Vital statistics taken from returns made to the Registrar are as follows:

Deaths—51 male and 31 female	82
Births—41 male and 38 female	79

We would recommend the payment of the following accounts:

Dr. Roberts, M.O.H.	$60 00
Wm. Young, Sanitary Inspector	60 00
Wm. Young, horse hire and disinfecting	4 00
George McIntosh, attending seven meetings	14 00
Wm. Laidlaw, attending seven meetings	14 00
Jas. Laidlaw, attending seven meetings	14 00
Jas. Laidlaw, horse hire and delivering notices, etc.	6 00
Alex. Stewart, disinfectants	25 50

Report of the M.O.H.

I beg leave to submit the following report of the health of the people of Guelph Township for the current year. This year the township has been singularly free of epidemics of the infectious diseases, such as scarlet fever, measles, whooping cough and diphtheria. In proximity to the city there is bound to be more or less extension of infection into the country, but in no case did it become an epidemic. Lately we had an outbreak of diphtheria in S. Sec. No. 4½, resulting in one death, but by strict observance of quarantine and the free use of antitoxin in children who were exposed to the infection there were no further developments and it was confined to the one family. We would respectfully call the attention of the people of the township to exercise a watchfulness over their children when complaining of sore throats, especially during the fall and winter months. If patches of membrane appear on the tonsils, or if croupiness persists for some time, they had better call in a doctor. In antitoxin we have a specific—a sure cure—for diphtheria if it is used early in the disease; all will recover if used in time. It is free for everybody, as it is supplied by the government.

The city sewage disposal plant installed in our township some fifteen years ago has been, and is, a source of continual worry to your Board of Health. The city at that time solemnly entered into an agreement with the township, and amongst other things agreed not to pollute the waters of the River Speed. Through the faulty working of their plant raw sewage is continually finding its way into the stream, and the agreement with the township is completely ignored. The septic tanks and the filter beds should be sufficient to handle the domestic sewage of a city the size of Guelph and have a clear affluent if the main sewers had been properly constructed, but on account of the loose joints the surface water finds its way into the main sewers and when the weather is wet they are filled to their greatest capacity and they have either to let the raw sewage run directly into the river or have their sewerage beds torn to pieces. They don't choose the latter, but pollute the stream. Your Board feel their responsibility in trying to safeguard the township's rights and have continually complained to the city authorities and pointed out the breach of agreement until forbearance has ceased to be a virtue and we feel that some stronger measures must be resorted to in order to abate the intolerable nuisance. As new main sewers are extended and new streets are opened up the condition every year is getting worse.

Wm. Young, Sanitary Inspector.

In presenting this my report for the year 1917, I have to congratulate you and the inhabitants of the township on the good health and exceptionally few outbreaks of contagious diseases that have existed in our midst during the present year, and I am glad to report that whenever any such cases have been reported or came to the notice of your Medical Officer of Health prompt action was at once taken by him and myself to prevent its spread and effectually stamp it out with as little expense and inconvenience to the families affected as possible.

I have received fewer complaints of existing nuisances during the present year than in former years, all of which was satisfactorily abated, with the exception of the one at the Guelph City Disposal Works, which still continues to grow much worse. The city officials in charge of this plant during the present year have been constantly making more connection, which brings down a much larger volume of sewage with no additions to the filtering plant to handle it, and the result was that it threatened to wash out and destroy the whole plant, and to prevent this being done large quantities of unfiltered sewage have to be discharged direct from the septic tanks into the river, which in my opinion must have the effect of polluting the river water to a dangerous extent. The river water is also being much polluted from sewage that gets into the storm drain that empties into the river at the south end of Wellington Street. On the fourth of June last I took five samples of water from the filtering plant, and from the river above and below the plant, and forwarded them to the Provincial Laboratories for analysis. The reports from same I handed over to your Medical Health Officer for his information.

In concluding my report I would ask you to pardon me if I suggest that you give this matter your most earnest consideration with a view to arriving, at the earliest possible date, at some satisfactory arrangement with the city authorities that will protect the health of the people of this township.

HESPELER.

DR. A. H. CAMPBELL, M.O.H.

I beg to present to you my fourth annual report for the year 1917 as Medical Officer of Health.

First of all, I am pleased to state that we have a clean bill of health at the present time, when the surrounding towns are reporting so many cases of diphtheria. In fact, we have had to quarantine only one house during the year, and that for a mild case of diphtheria. The only epidemic we have had has been a mild one of chicken-pox, and that now is about over. I feel sure there are few towns the size of Hespeler, that can make a better showing.

Our birth rate is larger this year there being 60 births during the year, with 29 deaths.

Our Secretary reports an increased number using our town water. We have an excellent supply of water, and I feel sure with the increased use of it we will get increased health.

I have had some complaints of there being a good deal of sediment in the water, especially at the far end of Walker Street. I think this could be overcome by allowing the users there to use more water.

Another matter that we have reason to be proud of is our scavenger system. As you know, the town has two complete clean-ups yearly, and partial ones oftener. There was some trouble in the spring with some of the householders, but our efficient Sanitary Inspector was able to fix it up, and now everything is working smoothly.

We have had the milk tested from time to time, and it is gratifying to find that it has always tested up to the standard.

IROQUOIS FALLS.

DR. C. F. DORSEY, M.O.H.

In the matter of the report of sanitary conditions and matters pertaining to the health of the municipality, I hereby submit the following:

With few exceptions, from a sanitary standpoint our town is one of the best in Canada. Until some arrangements are made for the final disposal of the sewage, we cannot say that our sewerage system is faultless, although this condition is one that is really more detrimental to others than it is to our own citizens, for, so far as we are concerned, everything is disposed of satisfactorily. The water supplied by the town system has analyzed extremely well, and at no time could it be put down as the cause of any epidemic or outbreak of any kind.

The scavenging system has been giving very good satisfaction during the past few months, and at present the refuse is being disposed of by being turned out on William Metcalfe's farm some considerable distance from the town. Until we have some satisfactory style of incinerator there is no use of our trying to dispose of it in town. The old incinerator fell down completely and must be classed as a failure.

The only outstanding unsanitary feature of the municipality at present is the lack of any sewage disposal for that part of the town on which the community houses are built. The outbuildings for these houses are very unsanitary, and should be disposed of and some sewerage connection made to this quarter at once. I intend taking this matter up with the Sanitary Inspector and having these outbuildings removed as soon as the frost will permit, and some satisfactory arrangements made until sewerage connections can be installed.

As you know, during the past winter we have had an outbreak of measles. This was the only epidemic, and it was hardly widespread enough to have this name applied to it, and by strict quarantining it has been checked, and no other cases have developed for several months. This quarantining may have seemed a hardship to some of the families, but I think the results obtained by it justified the steps I took in this matter.

We had one death from laryngeal diphtheria, but this was not seen sufficiently soon to take proper steps to save it, although any further outbreak in the family was kept in check by the immediate use of large quantities of antitoxin.

The percentage of births in town according to population have been abnormally large, and the deaths, from all causes, have been abnormally small, there being forty-four births and nine deaths. The comparison between deaths and births in the above figures is even better than the figures would indicate at first glance, as the number of deaths at the hospital amongst non-residents of the town is far in excess of the number of births from the same source, thus making the ratio of births to deaths considerably higher amongst those ordinarily resident in town.

Before closing I would earnestly request all citizens to co-operate towards keeping up the reputation of our town from a sanitary standpoint. This can be done by using extra care in disposing of refuse from the houses, camps, etc., and seeing that everything of this nature is put only into the receptacles provided for this purpose. If the dish-water and such like were disposed of in the kitchen sinks instead of being thrown out of the back doors it would go a long way towards keeping down the number of house flies during the summer months. A good many people do not realize this, although in every other respect their house surroundings are very clean. However, there are an immense number of flies which are attracted to back doors by the dish water and other liquid refuse which are thrown out. Keeping the lids on the garbage cans would also assist in this connection. These are really of more importance than one would think on a casual viewing of the matter, but it is a fact that a good many diseases are brought by the common, ordinary house fly, and anything we can do to remedy this will be time well spent.

Just one other matter where the citizens in general can be of assistance. Although our filtering system is of ample capacity to supply the needs of the town under normal conditions, it is being taxed to its utmost limit by the wastage of large quantities of filtered water through leaving kitchen and other taps running when not in use. This has the effect of running the water through the filters too quickly, thus making them unable to supply water of the same purity as they would otherwise do.

KEEWATIN.

Dr. E. Baker, M.O.H.

In compliance with the requirements of the Public Health Act I hereby submit to you my annual report for the year ending December 1st, 1917, and I shall mention briefly the conditions with which we have had to deal during the year. The general health of the community, outside of the outbreaks of contagious disease, has been fairly good. During the year seven deaths were reported as follows: From cerebral softening, 1; infantile convulsions, 1; broncho-pneumonia, 1; whooping cough, 2; locomotor ataxia, 1; and scarlet fever, 1.

Epidemics.

On March 22nd, 1917, measles was discovered in the homes of four different families, and before the epidemic was controlled thirty-seven families were quarantined, the last being on the twenty-first day of May.

It was found conclusively to have originated in the military camp stationed at Port Arthur and was unfortunately brought to Keewatin by some of its members who were visiting their homes here. Similarly to the epidemic of 1915, the original cases were not discovered until the disease had gotten into the schools, when all hope of checking its spread was lost.

The only possible hope of preventing an epidemic of measles rests in the discovery and proper handling of the first case, before there has been any possibility of contact with others. Failing in this, one need not look for success.

We had example of the above. In the latter part of January, a woman of our town visited Ignace, her two little girls accompanying her. Two or three days after her return the children contracted measles. The father was away, no stranger had been in the house, neither had any one of the family been out of their own home after their return. The place was placed under strict quarantine for three weeks, after which the house was thoroughly fumigated and cleaned, and no new cases developed.

They have had the same difficulty in controlling measles in every municipality in Ontario where the disease has occurred.

On September 6th, 1917 a Kenora physician reported a case of scarlet fever at the home of Martin Skillen. Between September 6th, 1917, and November 2nd, 1917, the disease spread to the homes of twelve other families. There were no developments from the latter date until November 15th, 1917, when a fresh outbreak started, and subsequently six other families have been quarantined to date.

Scarlet fever, although a more serious condition, is not so contagious as measles, and its control depends on the vigilance of the health authorities, the education of the public on all points concerning the symptoms of the disease, and the honesty of the people of the community.

The Provincial authorities tell us that where the disease continues to spread, it is because of the so-called missed cases.

People dread the six weeks quarantine, and will in some instances stop at nothing to conceal a case, and if it be a mild case in an infant or one of the younger members

of the family under school age, will not report the case so long as they think the child will recover without the doctor's aid, and will viciously allow the other members of the family to attend school and infect all those with whom they come in contact. This is the way the authorities claim the disease is spread.

After the last outbreak the school was fumigated, and floors, seats, desks and woodwork thoroughly scrubbed, and teachers and pupils given to understand what their duty is, as well as that of the parents, in regard to the apprehension of early symptoms in children, and reporting the same forthwith to the Medical Officer of Health, and the punishment to which the householder is liable in case he or she fail to do so.

In the month of July a woman from another province, whose children had been exposed to whooping cough, visited Keewatin. While here the children developed the disease, which spread to other homes and as a result two deaths occurred; an excellent opportunity for a judicious person to have apprehended the serious consequences of a visit under such circumstances and the saving of two lives.

I might say that people coming here from western provinces seem to have a vague conception of what their duty is in regard to carrying out laws of health. Whether the health regulations are lax, or the proper education of the people in this line neglected, I do not know. However, they seem to take liberties and do things that would not be tolerated in this province. No new cases of tuberculosis were reported during the year, and we are proud to state that typhoid fever is becoming a thing of the past in Keewatin, not one case having occurred during the year.

Clean milk of a good quality was sold by the milk vendors during the year, and although in some instances the surroundings, apparatus for cooling, storing, etc., and stabling of cattle, were superior to others, yet on the whole the milk business was satisfactory.

The Cow By-law, which was considered a hardship at the outset, is now generally conceded to be the only way to handle the situation.

The cleanliness, tidiness and general improvements made in homes and premises during the year, all of which contribute to the health of our town, is worthy of mention, when we compare the general appearance of the present Keewatin with that of the Keewatin of twelve years ago. I think our success in convincing the Council of the necessity of building an Isolation Hospital, and the establishment and municipal control of the garbage and sanitary closet system, will be better assured by a joint meeting of the Municipal Council and the Board of Health in the near future.

KINGSVILLE.

JOHN EARLE JENNER, M.O.H.

I beg to submit my annual report as M.O.H. for the year ending December 1st, 1917.

Communicable Diseases.

With the exception of sore throats, fourteen cases of which were reported as diphtheritic, and two cases of measles, all of which recovered, no other cases of infectious diseases were reported. The usual crop of fly-borne diseases formerly so prevalent among children during the summer months was practically nil, showing the care the citizens are taking to destroy all garbage and breeding places for flies. The propaganda against the spread of contagion of every kind, as carried on largely through distributing literature on the subject through the public schools, is bearing fruit.

The milk supply, I believe, has been uniformly satisfactory. I have not had one single complaint during the year, which is remarkable.

The absolute freedom from typhoid fever is *prima facie* evidence of a relatively pure water supply. The condition of the water has, no doubt, been materially improved by diverting the overflow from numerous cesspools that formerly found its way into the street sewers.

The work of the Sanitary Inspector has been entirely satisfactory; he has shown tact and thoroughness in his work.

I would again call the attention of the Council to the advisability of passing a by-law regulating the disposal of night-soil where cesspools or sanitary tanks are not in operation, and a by-law forbidding the use of vaults and providing for dry earth, fly-proof boxes. This, with our present system of caring for garbage and stable refuse would almost eliminate the danger from flies. It would at least reduce it to a minimum.

Owing to the war demands the District M.O.H. has not been able to devote any time to lectures as in former years. This work has consequently been left to local men.

LINDSAY.

Dr. J. McAlpine, M.O.H.

In submitting my report for the year ending November 15th, 1917, I am pleased to report that the town has been fairly free from contagious diseases.

The following cases were reported, viz.:

Scarlet fever, 3 cases; all recovered.
Diphtheria, 7 cases; 1 death.
Typhoid fever, 4 cases; all recovered.

Several samples of town water were sent to Toronto for analysis during the year, and each report received stated that the water contained colon bacilli. The Board of Water Commissioners has undertaken to improve the supply by adding five new filters, each having a capacity of 250 gals. per minute, and they hope to have the same in working order by the middle of December.

I am sorry to have to report that the Town Council nor the Water Commissioners have not complied with the numerous and urgent requests your Board has made to them to have the Isolation Hospital supplied with town water. It seems too bad that the Hospital cannot be used owing to the lack of a proper supply of water, after your Board going to the expense of putting in a septic tank and equipping the Hospital with all modern improvements.

MILTON.

Dr. R. K. Anderson, M.O.H.

As Medical Officer of Health for the town of Milton, I beg to submit the following report for 1917:

Infectious Diseases.

	Cases.
Measles	2
Scarlet fever	1
Diphtheria	11
Total	14

No deaths.

Births	38
Marriages	11
Deaths	20

The diphtheria epidemic has been the most serious. It presumably started from an outside source. It spreads by contact. A person may give the disease to others and not have it himself. In other words, he is a carrier and is a menace to the public health. Strict quarantine with attention to the throat until repeated tests prove the absence of the germ is the only remedy.

One such case has been found and is under observation. Patients having the disease will be liberated from quarantine as soon as laboratory tests prove the absence of the bacilli and not at a set time as specified by the Medical Health Act. This may seem unjust to those kept in quarantine longer than others, but the public safety must receive first consideration.

The school has been reopened. It is felt to be useless to keep it closed unless Sunday schools, picture shows and public meetings generally are also prohibited. The epidemic does not warrant this.

Quarantine is the only effective way to prevent the spread of the disease. If citizens would remember this and look promptly after all suspected cases there would be little trouble.

Estimating our population at 2,000, the births show a ratio of 19 to the thousand, which is not high. There were premature births two, and two still-born.

Twenty deaths gives a ratio of 10 in the thousand, which is a good showing. The causes of death were: nephritis, 4; pneumonia, 2; bronchitis, 2; spinal paralysis, 2; still-born, 2; and one each of asthma, mastoid disease, drowning, diabetes, cancer, atheroma; and two premature births.

There is an improvement in the general cleanliness of the town. It is as neat a town as you will find in the Province, with a water supply unexcelled. The surrounding farming community is prosperous and hard to beat. The scenery is picturesque beyond comparison, and we are in the industrial heart of the Province. Why not revive our Board of Trade and advertise our advantages?

We should anticipate *post bellum* depression by increased activity to encourage industries to locate here.

NORTH BAY.

DR. EDGAR BRANDON, M.O.H.

I herewith submit my fifth annual report as Medical Officer of Health of this Municipality. In doing so, I have to report a marked reduction in the number of communicable diseases, there being 72 cases reported as against 112 in 1916 and 397 in 1915. The cases reported are apportioned as follows:

Communicable Diseases.

	1917		1916	
	Cases.	Deaths.	Cases.	Deaths.
Measles	19	.....	18	.....
Scarlet Fever	.....	.....	2	.....
Diphtheria	35	5	37	3
Typhoid	3	1	9	1
Tuberculosis	5	3	7	8
Chickenpox	4	.....	38	.....
German Measles	6	.....	.....	.....
	72	9	112	12

Vital Statistics.

During the year there were:

	1917.	1916.
Deaths	163	115
(Percentage per thousand, 11.6.)		
Births	332	379
(Percentage per thousand, 34.6.)		
Marriages	91	94
(Percentage per thousand, 9.08.)		
Population	9,198	

This is an extraordinarily good showing. Seventy-two communicable disease, with only nine deaths, in a population of 9,198, is a very low death rate from this cause.

Diphtheria.

A small epidemic broke out this fall and was principally confined to children from St. Mary's School. Two or three of the deaths were due to the fact that physicians were not called in at an early stage of the disease, in one case the child being dead on his arrival, the second being so terribly infected that it died a day or so later. The laryngeal form of diphtheria misleads many people and is mistaken for croup and is very rapidly fatal. Parents should call their physicians early in this disease, as antitoxin given early gives quickest results and stops the disease readily. The free antitoxin supplied by the Provincial Board of Health is a great boon, and there is no excuse now for any delay on account of the cost of the remedy.

Typhoid Fever.

There were three cases reported, two of which originated from outside the municipality and were patients in the hospital, one from Desauliniers on the C.N.R. west from here; the second case came from Trout Mills; a third was a carrier in the family. The case that died came from Trout Mills and was a very severe infection, the patient contracting it through a common carrier. The town cases were investigated as to their origin and were definitely ascertained as to the probable condition.

Measles.

Measles occurred rather sporadically this year, as there was no epidemic as in other years. One or two cases came from Toronto and gave it to relatives. Some German measles also occurred. There were no deaths from this cause.

Scarlet Fever.

No cases were reported this year.

Tuberculosis.

Five cases were reported, and there were but three deaths as against eight deaths last year. This still would indicate some improvement, but the "White Plague" still holds its place as the greatest cause of death in this country. Notification of this disease is compulsory, and yet we are convinced that the public are not aware of this fact and are held responsible in law same as for smallpox.

The public should realize that every so-called consumptive, with the tubercle bacilli in his sputum, is a serious menace to the rest of the household, and should use every precaution to prevent communicating this disease to others. The sputum should be carefully taken care of and destroyed, and contact with the infected patient should be avoided as far as possible, thus preventing the introduction of the organisms into new ground.

Whooping Cough.

There were four deaths from this disease, yet not a single case was reported to the Department. This is a highly communicable disease and should be isolated from other children and kept out of schools. Children may be immunized by a vaccine prepared and supplied free to the Boards of Health by the Provincial Laboratories. Thus a child may be protected by vaccination, just the same as against smallpox, and when one realizes that four lives were lost in this municipality due to this disease, and we have a preventive at our disposal, it is a cause for great regret. I would urge parents not to disregard this disease and look upon it lightly, as it is a fatal disease in many epidemics, and as the treatment of the disease by vaccines has improved so much the last few years a great deal of suffering and loss of life may be saved by prompt care and efficient treatment.

Smallpox.

No cases have occurred in this municipality for several years, but it has been very prevalent west of here at Warren, St. Charles, Verner and Sudbury. The close proximity to these places, and our central point as a railway centre, makes it almost inevitable that sooner or later some case will drop in here. I would therefore draw the attention of the Contingent Committee to the need of having our Isolation Hospital equipment overhauled and ready for any emergency. The present building is too far away, and as the town is still in controversy with the C.N.R. over land damages to the present building site, I would suggest an exchange for one of their town houses would be in order. This would give us a building close at hand, with sewerage, water and lighting facilities. This would assist us materially in handling other communicable diseases as well, as quite often we have cases in boarding-houses or hotels, or people drop into town with some disease requiring isolation and become a burden on others which could be easily cared for if we had the accommodation.

Water.

During the year, we regularly sampled the water from Trout Lake and from the stream emptying into it. During the summer there was a small amount of infection in the water most of the time, but in diluted quantities. We found that Lee's Creek, emptying in near the smelter, was grossly polluted all the time, showing that the area it drains is heavily infected. The effort by Council to gain sanitary control of the area around the lake by means of a private bill from Legislature deserved commendation, and, while it failed, served to stimulate a greater interest in pure water supply. I regret to state that the municipal council of Widdifield has not lived up to their agreement

as to better sanitary supervision of this section. They have not seen to the installation of sanitary buckets for the outside closets, as not one-half of the houses are so equipped. Such as are there have been cleaned by the town's contractor periodically. So far as personal observation goes of both myself and the Sanitary Inspector, we cannot say that there has either been a determined effort on their part to carry out their undertaking any improvement in the sanitary conditions around the head of Trout Lake. We are still of the opinion that the only solution of this problem is by gaining sanitary control by means of a private bill, as attempted last year. The people most vitally interested are ourselves, and we consequently are most likely to see that the sanitary laws are observed and lived up to. We cannot hope to secure from the Widdifield council an enforcement which would be as we desire. They are not as seriously affected, and besides haven't the machinery to carry out the law. I would suggest that the Council re-apply at the next reunion of the Provincial Legislature for the necessary points.

Sewers.

Lateral extensions were approved by the Board of Health on Bell, Durrell, Worthington Street East, Cedar Street, etc. The trunk sewer scheme has been progressing and will this year reach the corner of Worthington Street on Sherbrooke Street. This is a much-needed sewer, and we trust the entire scheme will eventually be realized. This would help considerably in supplying the section in the Wallace Park district with sewers, and particularly if a cross-over be effected with the present storm sewer at the corner of Wyld and Second Avenue. This storm sewer is now being used as a sanitary sewer by many people, and contrary to law, it would appear. Its use could be extended to the corner of O'Brien Street and High Street if the switch were made as suggested. I have mentioned this in previous annual reports, and I believe the Town Engineer has it under consideration. The saving to the municipality would be considerable, as well as reducing the number of outside closets. The removal of night soil and garbage has been carried out under the supervision of the Sanitary Inspector. I wish to congratulate the Council this year upon adopting and putting into operation our repeated suggestion of former years to dump the night soil into the sewers during the months in which it is feasible. This makes a great reduction in the trouble at dumping ground and reduces the danger of contamination from fly infection as well as reducing the trouble over this matter with the township of Widdifield. This is surely a step in advance made in this, which has always given us a good deal of concern for the safety of our citizens against typhoid infection.

Milk and Dairy Inspection.

During the year twenty dairymen registered in compliance with the milk by-law, licenses being granted to seventeen, as against fifteen last year. These were:

Louis Besserer	License No.	49
J. B. Overholt	" "	48
S. Simms	" "	47
G. C. Smyth	" "	46
G. F. Thorne	" "	45
F. E. Longhurst	" "	44
Mrs. Haw	" "	43
A. D. Besserer	" "	42
John Hogan, Powassan	" "	41
Mrs. Stevenson	" "	40
W. F. Clark, Powassan	" "	39
T. K. Purden	" "	38
Mrs. R. Leach	" "	37
E. Eloy	" "	36
Jos. Sabourin	" "	35
Jas. Passmore	" "	34
Chas. Passmore	" "	33

These dairies have been periodically inspected during the year.

Sedimentation tests for dirt and butter fat have been carried out every month, and some cases have been found too dirty and coloured with harmless dye and returned to the producer. From our observation of the dirt test we are forced to the conclusion that sufficient care in milking and bottling is not exercised. Manure and other debris are constantly found, and certainly never got into this food save by careless, indifferent bottling and lack of proper care of cows' udders, flanks and tails. Part of this dirt, probably 50 per cent., is soluble, and cannot possibly be strained out by any known method. Prevention is the only way. The increased cost of this necessary article of diet demands that the producer must needs give a purer, cleaner article. Milk is now

25 per cent. higher than it was last year, and this very sharp increase over last year should bring with it the compensating virtue of being at least cleaner than ever.

I regret that we have not been able to get away further with our tuberculin testing of the herds. As I pointed out in previous years, we were, once the necessary alterations to the by-law were approved by the Minister of Agriculture, entitled to a free inspection by a competent inspector from Ottawa. These have been held up by the Minister pending a conference between producers and the general public. For some reason this has never been held, and so our hands are tied. Personally I feel that this is a matter in which they have no right to be consulted, as I cannot see how the use of milk from tuberculous cows can be tolerated without compelling all dairymen to pasteurize their milk. I would urge on Council the cleaning up of these points of controversy, so that the services of the Dominion Government Veterinary Inspector may be procured and the tuberculin test carried out. I am again pleased to announce a reduction in the number of diseases due to diarrhœa and enteritis in children under two years, there being but two cases, as against nine last year, as against 17 in 1915 and 18 in 1914. This is a cause of death definitely due to infection found in the milk, and a truly preventible disease. I cannot help but feel that this must be partially due, at least, to the fact that from 30 per cent. to 40 per cent. of our milk is now pasteurized, which kills out the organism causing diarrhœa. Certainly the improved condition for dairies from year to year has materially reduced the death rate from this cause.

Market.

A great deal of meat is being handled at the market, and the condition, while improved over former years, is not very sanitary. I am glad the Council has moved to more thoroughly close this make-shift building in. The conditions under which this beef is killed are doubtful. Provincial Sanitary Inspector White investigated some of their conditions in and around Bonfield, and found that very unsanitary means were used, the cattle being killed in the field and the entrails left in the open, with no disposal according to law. No inspection of this meat can be carried out under this system, and it would appear that this method of handling is open to serious question. I am glad to say, as a result of Inspector White's visit, conditions have been much improved. The question of lavatory and toilet facilities for the farmers coming to town, as well as a rest room for them, has not been taken up by the Council as recommended in my last annual report. This is an urgent matter, as well as the need for public lavatory, which could be solved at the same time. Farmers driving long distances, as they do, require such accommodation urgently, and such should be provided by the municipality. The construction of an up-to-date market building centrally located, with such necessary rooms and accommodation, should be seriously considered.

Conclusion.

The work of the year by the Board of Health was somewhat dislocated over the controversy with the Town Council, relative to the appointment of the Sanitary Inspector, two of the old members resigning. Nevertheless the results this year have been satisfactory, and the old members and ex-members have taken a lively, active interest in the public health matters, and Mr. Whitehead has shown a keen desire to co-operate with me in carrying out the different health procedures and has been a willing, pains-taking, active official. Dr. W. E. George and Mr. A. R. White, Provincial Health Official, have very willingly assisted us whenever called upon.

THOS. WHITEHEAD, SANITARY INSPECTOR.

I herewith submit a report of the work done in my department since commencing duties on February 12th, 1917.

I have used every care and precaution possible, where communicable disease was known to exist, also in disinfecting houses and schools and any other places frequented by patients prior to being quarantined.

Garbage System.

The collection of garbage and trade waste is carried on the same as previous years, namely, that of being operated under tariff and governed by by-law. Charges varying from $60.00 to 50 cents per household. The number of customers handed to the clerk for insertion in the collector's roll is 100, the revenue from same being $1,494. Since returning list to clerk, 75 customers have been taken on; out of this 25 have received one service, 50 have had service ranging from one month to six months; the revenue from these would be $114.75. Summary of this work would be:

Number of loads hauled to dump	485
Number of loads manure hauled	49
Number of loads ashes	75
Wood hauled for charitable purposes	14
Dogs picked up on streets or from Police Department, taken to dump and burned	69

In addition, the department moves all street cleanings, accumulations from waste-paper bins, manure from Public Works Stable and Fire Hall weekly, and ashes from Town Hall. I would ask that next year's Council take up at an early date the present system of garbage collection, with a view of having a general levy, say one mill on the dollar, which would pay for two extra teams and equipment and give every household service. I am sure that if this system was adopted it would mean dollars in our rate-payers' pockets as well as placing our town in a more sanitary condition.

Dumping Ground.

On visiting the dumping ground early in the spring, I found the garbage, etc., scattered over a wide area, which took considerable time and expense in cleaning up. There being a high rock behind the dumping ground, a road was made to the top, and a barricade was constructed along the face of the rock, with a slide. All the garbage is now thrown over this barricade or down the slide. Our collectors keep this garbage burning all the time, and there should be very little, if any, cleaning up to be done next year.

Water Supply at Trout Lake.

I have sent 48 samples of water to Provincial Laboratory for analysis for Trout Lake and district. September and October collections showed slight pollution. I am sure Dr. Brandon, M.O.H., will deal with this matter in a more comprehensive manner than I can hope to.

Night Soil Collection at Trout Lake.

On April 1st, 1917, an agreement was reached between the corporation of the town of North Bay and the corporation of the township of Widdifield for the protection of the water supply to North Bay, the town of North Bay agreeing to look after the removal and collection of night soil within the area shown on the plan; the Township agreeing to pay to the Town of North Bay 25 cents per household per month, the Town of North Bay to bear the balance of the expenses of the said disposal. The amount to be paid by the Township to the Town not to exceed $30.00 (thirty dollars) per annum. I did not know of this agreement being reached until I was notified, on August 24th, to have closets cleaned out at Trout Lake. On August 28th, six of these closets were cleaned out by Contractor Vachon, and on my visiting Trout Lake, accompanied by Mr. Angus, I found that most of these places were not supplied with cans and in a very unsanitary condition. On the contractor's next visit he only got 15 cans out of the 24. Since then four notices have been served to have cans installed within three days. Three families have T. Eaton & Co. $7.50 chemical closets, which they strongly object to have emptied by the contractor. I have notified the Township that these chemical closets will require to be emptied along with the others, as parties using them often fail to put in sufficient chemicals to do any good.

Night Soil Disposal.

In June last arrangements were made to have night soil run into manhole of sanitary sewer at south end of Regina Street. A large square funnel with a screen across was produced, a six-inch square door was made in the end of the contractor's wagon, and a 1½-inch hose was supplied. This method of disposal has been working all summer. I have had a large number of complaints re cans not being emptied on time; in most cases the scavenger is not to blame; all that is required is extra service; any omission made was speedily rectified.

Plumbing Inspection.

This has been a very quiet year for plumbers. Twelve inspections is all that I have made. On making these inspections I found that the soil pipe had been improperly caulked. This was rectified by the plumber when his attention was drawn to it.

Sanitary Sewers.

There has been very little done in the way of laying down sanitary sewers. About 70 feet of 10-inch sewer was laid on Worthington Street between John Street and Regina Street. The main 30-inch sewer was carried another 400 feet up Sherbrooke Street to Worthington.

Milk Supply.

Forty-two inspections were made of dairy farms which produce milk for human consumption in North Bay. Seventy-seven tests were made and the milk found good both as to fat percentage and cleanliness, the average test for the year being 3.80 B.F., well above the standard required by the Government and by-law, the highest individual test being 6 and the lowest test being 3. Periodical tests were made at railway depot and dairies for the dirt and temperature. Only four gallons were destroyed for being excessively dirty. The daily average quantity of milk sold in the town of North Bay is about 1,325 quarts by the seven licensed vendors. Four of these licensed vendors procure their produce from farms in the surrounding country. Three produce and peddle their own milk. There are twelve people with one or two cows who sell milk in small quantities, and it is a most difficult thing to get them to observe the by-law. They state that they only keep a cow for their own milk supply, or that they give to a friend for the baby, and it is difficult to detect them actually selling it.

Nuisances.

Unsanitary premises	53
Keeping hogs in unsanitary condition	5
Offensive privies	32
Accumulation of manure and no bin	14
Garbage nuisance	13
Unsanitary buildings	2
Unsanitary boarding-house	1
Keeping hides on the premises	1
Other nuisances	20
	141

In connection with notices served for the abatement of nuisances only one case was taken before the magistrate, who allowed this party out on suspended sentence, provided he cleaned up; which was done.

On my frequent visits to the grocery and fruit stores, twenty hampers of peaches, three baskets of plums and one of apples were seized and destroyed.

In conclusion, I may say that while my duties are arduous and often unpleasant, there is a satisfaction in knowing that one is doing something for the health of the community. I wish to thank the chairman and members of the Board of Health, the Mayor and Council, for courtesies extended me. I also beg to thank Dr. Brandon, M.O.H., and Dr. George and A. R. White for the helpful advice they have given me at all times.

REPORT OF THE SECRETARY.

I herewith submit a brief report as Acting Secretary of the Board of Health, for the year 1917.

At the beginning of the year the following persons were identified with the Board: J. T. McDougall, chairman, Dr. Brandon, M.O.H., Mayor T. J. Patton, R. Rankin, and S. J. Cherry. During the summer J. T. McDougall and S. J. Cherry resigned, their places being filled by R. Tyner and R.A. Sheppard, with R. Rankin acting as chairman.

Eight meetings were held, with no outstanding features.

At the regular meeting of the Board held in April the following resolution was put through: "That the Mayor and Council be requested to call a meeting of all parties affected by By-law No. 488, being a by-law instituting the tuberculin test of all cows supplying milk to this municipality." For some reason nothing was done.

Sewers.

At the September meeting of the Local Board the following resolution was put through: That sanitary sewers be laid on the following streets:

On Cassells Street	330 feet.	Estimated cost	$500 00
On Bourke Street	300 feet.	" "	758 00
On Durrill Street	297 feet.	" "	792 00
On Morin Street	750 feet.	" "	2,946 00
Total number of feet	1,677		$4,996 00

Communicable Diseases.

During October there was a slight outbreak of diphtheria, with four deaths, which centred around St. Mary's S. School. This school was thoroughly fumigated on two occasions. Every precaution was used by the Medical Health Officer to stop the spread of this disease, which was successful. At present there are three cases of diphtheria and two cases of measles in town. Dr. Brandon is dealing with the number of contagious disease cases in his annual report. He is also dealing with the water supply at Trout Lake, and sanitary conditions of the town.

In conclusion, I may say that this is a brief summary of the principal items dealt with by the Board for 1917.

ORILLIA.

DR. JOHN MCLEAN, M.O.H.

As you are aware, the Town Council has passed what is described as "a model milk by-law," giving your Board increased control over dairies and the delivery of milk to consumers. The town had a sad and expensive experience early in the summer, attributable to the supply of milk from one dairy being contaminated with typhoid germs. The place was promptly ordered closed, and the result was that the development of any further cases of the disease disappeared. I confidently expect that the additional powers conferred on your Board by the by-law will be fully and carefully enforced for the protection of the public. I freely admit that the majority of the milk dealers do their utmost to give their customers good and wholesome milk, but one who is careless and defiant of sanitary laws can do an incalculable amount of harm. It will be the duty of your Board and its officers to see that there will be no recurrence of such a calamity. Of course, the appointment of the executive officers lies with the town Council.

You must have observed that the number of scarlet fever and diphtheria cases are much in excess of former years.

The Provincial Board of Health, more than a year ago, issued regulations regarding the storing and disposal of manure. The character of the receptacles is plainly defined in the plans and specifications. It has required very much persuasion, and in some cases legal action, to bring many owners of stables to conform with the law; but I think I can safely say, judging from the reports of Inspector Lee, that things are at present in a satisfactory condition.

The water supply is systematically looked after by the Commission. Tests are made at regular intervals, and citizens may rest assured that they are supplied with wholesome if not palatable water.

There are no slaughter-houses in town, and all the meat consumed is brought in from outside points. The transportation has improved markedly in the past year, but it is not yet up to the standard required by the Public Health Act.

The usual crop of complaints regarding overflowing cesspools, improper drainage, keeping of hogs, etc., were dealt with satisfactorily.

Respecting the prevalence of scarlet fever, I have come to the conclusion that owing to the mild type of the disease many cases occurred where no physician was called in, and consequently no steps could be taken by the authorities to isolate the patients and prevent its spread. I would urge upon parents and others interested the necessity of reporting every suspicious case, so that the proper steps could be taken to prevent contagion. Although the type for the last year has been benign, it is impossible to predict how soon it may become malignant, and then the results would be disastrous. I hope this warning will be heeded.

The source of the diphtheritic cases has been very difficult, and in the majority of cases impossible, to trace. There are persons who communicate diphtheria in which the usual symptoms are not manifest. They are called "carriers." The only way by which these can be detected is by a microscopic examination of the secretion of the throat. Therefore, in order to secure immunity from this disease, a careful examination of all suspected persons, particularly factory employees arriving in town from other centres, should be scientifically made.

Owing to the failure of the Council to pass the necessary by-law I could not compel connection with the sewers in instances where I thought it would be of much benefit. I trust the Council will without delay take the proper steps to remedy this undesirable state of affairs.

The Isolation Hospital has been found of great service for the accommodation of contagious diseases. Many cases had to be removed there during the year.

Following is a report of infectious disease and deaths therefrom: Scarlet fever, 24 cases, 1 death; diphtheria, 26 cases, 2 deaths; typhoid fever, 158 cases, 4 deaths; measles, 15 cases; tuberculosis, 2 deaths.

OWEN SOUND.

In compliance with the requirements of the Public Health Act, I herewith submit to you the annual report of matters pertaining to the public health of this municipality for the year 1917.

Dr. Murray, our Medical Officer of Health, is, as you know, at present in France, right up at the front, helping our boys who have the misfortune to be wounded in the great struggle. We are all proud of him, and I am sure I voice your sentiments when I say we wish him a safe and speedy return to his home.

It is my pleasure to report a great deal less trouble with contagious diseases than last year, when we had such a serious time with measles and typhoid fever. This year there were a great many cases of rubella, or so-called German measles, a very mild disease, scarcely worth while quarantining were it not that a mild attack of scarlet fever might be mistaken for it. Of scarlet fever there were but two cases reported, with no deaths. Nine cases of typhoid fever were reported, with one death. There were quite a number of cases of chicken-pox and whooping cough, but these are ever with us to a greater or lesser degree.

With reference to the typhoid fever, there is reason to believe that some of the cases were contracted out of town, but developed here. Frequent analysis of the water was made by the laboratory of the Provincial Board of Health. Mr. C. J. Pratt sent samples from the high and low pressure systems every week or two during the danger period, and the reports were almost uniformly good. The Public Utilities Commission are doing everything in their power to ensure a safe water supply.

The garbage collecting system has worked very satisfactorily, there being very few complaints till lately, when, with the onset of winter, the men seem unable to keep up with the work. The filling in of the marsh lots goes steadily on, gradually disposing of the stagnant frog ponds and mosquito beds, but some of the owners of lots on 3rd Avenue East between 12th and 13th Street are suffering; either the back ends of these lots should be filled in, or drainage should be provided for, as the dumping of garbage has forced the water over on these lots. Filling in seems the best solution of the difficulty, as there is not sufficient fall at this point to provide efficient drainage. I would recommend that the Sanitary Inspector be instructed to interview the above mentioned owners and see if they would not allow the garbage men to fill in the rear of their lots this winter.

The slaughter-houses have been inspected regularly and found in fairly satisfactory condition. As a result of the Board's act last spring, Mr. Boyd's slaughter-house has been put in a much better condition.

The milk tests have shown that a good quality of milk has been delivered to the public. These tests apply only to the dealers using delivery rigs, and not to the smaller dealers with one or two cows; but I would like to take this means of informing the public (as I presume this report will be published as a whole or in part) that Mr. King is ready at any time to test any sample of milk from any source, free of charge.

The Dairy Inspector, Dr. Norton, has found it hard to make some of the producers live up to the milk by-law. As a number of members of this Board visited one of the premises complained of you will appreciate some of the difficulties he experiences. He is asking to-day that one of the vendors be ordered not to purchase milk from one of the producers until the latter has cleaned up his premises as required. Even though the milk supply be short, this Board will have to back up Dr. Norton in his eflorts to ensure a clean milk supply, and suspend or cancel permits where necessary. Impure milk is one of the causes of typhoid fever; and it is quite possible that the few cases of this disease that we had this year were due to faulty milk. Better a short supply of pure milk than an abundance of impure.

This fall there has been an unusual number of cases of skin diseases reported from the schools, mostly scabies (itch) and impetigo. Impetigo has not been confined to the schools, but a number of men of shaving age have contracted the disease. This is due to uncleanliness somewhere. Parents feel aggrieved over having their children kept home from school, but it is the only way to prevent the spread of these diseases.

Appended to this report will be found a report of the average milk tests for the year for the principal dealers.

Other than a few cases of whooping cough, I believe the town is free at present from infectious diseases.

AVERAGE OF MILK TESTS FOR THE YEAR 1917.

Vendor.	Fat per cent.	Total solids.
Owen Sound Dairy Co.	3.8	12.19
L. Kivel	3.9	12.24
W. C. Barber	4.3	12.59
R. J. Walters	3.8	12.26

PARRY SOUND.

DR. W. R. MASON, M.O.H.

I have much pleasure in passing on to you the annual report of the Medical Officer of Health, and I think that you will agree with me in saying that he has given us a very comprehensive and business-like statement of matters concerning the health of the town, and that one of the most gratifying items among the many given is the one stating that *not one case of typhoid fever had its origin in the town this year*, and when added to this, that we have no cases of contagious disease at the present time, notwithstanding the crowded condition of the people in many parts of the town, it is certainly a very gratifying and unusual report for Parry Sound.

There are many reasons which might be given why the health of the town has so greatly improved, but the chief reason is, undoubtedly, the fact that the Medical Officer and the Inspector *have been on the job all the time.*

The summary of the Sanitary Survey, which you will find in the report of the Medical Officer, is a very interesting statement of conditions as they exist, and when one for the year 1918 has been made, we will be able for the first time to know positively whether we are making progress or going back, and the knowing of this will aid future Boards in improving the sanitary conditions. I would like to impress upon you, not only the value of such statistics as these, but also the very great amount of work required to gather and arrange the facts in so concise a form. The Board wish you to know that this survey is a record of the sanitary conditions and conveniences of every residence in the town, and next year it will show where improved conditions have been found, as well as where unsatisfactory conditions have been allowed to remain or grow worse. The work of the Medical Officer of Health and the Inspector this year in cleaning the town and in preventing the spreading of contagious diseases is a matter of which the Board of Health is very proud and which you would do well to properly appreciate.

During the year you have caused several residential districts to be drained better than they were before and thus made it possible for the Board to keep these areas in a more sanitary condition.

The milk by-law passed by you is helping to improve the quality of the milk sold in town, and it is intended that the improvement shall continue.

The passing by you of By-law No. 488 is aiding in giving the people fresh fruits and other food-stuffs in better order, but in the opinion of the Board of Health the enforcement of this by-law only tends to alleviate conditions, which to a great extent should not exist, and for this reason the Board hopes that as soon as financial conditions will permit, you will see your way clear to put such a surface on those portions of our streets lying in front of the chief stores dealing in food stuffs as will make it possible to keep them entirely free from dust and filth. If this cannot be done next year, then some efficient method of street cleaning and, if possible, of preventing the scattering of paper and other things on the street, should be adopted.

The inspection of slaughter-houses has shown that they are in a fair state of cleanliness, but conditions have lately arisen which should make it necessary to consider some method of inspection of animals which are to be killed. It is time that the public was given some reasonable assurance that all meat offered for sale in town was made from animals that were not suffering from some disgusting disease.

The Board asked you early in the year to take steps to secure a report as to the best source of a permanent water supply, and are pleased to know that you have taken such action, but regret very much the seemingly unnecessary delay in the furnishing of such report.

The work this year, outside of making the sanitary survey, has consisted chiefly of attending to innumerable small matters, none of which, taken separately, would have been of much consequence, but which, if left without attention, would have collectively been serious. Perhaps the prompt attention to these little things, as they cropped up, has prevented us from having to deal with more serious conditions.

I am very much pleased to report that the members of the Board have been greatly interested in the work this year and have worked together smoothly and well, trying at all times to improve the sanitary conditions and, by doing this, to make the town more healthy.

It has been a pleasure to preside over a Board that was so willing to do the work for which it was appointed.

Annual Report of M.O.H.

In presenting this report I wish to state that we have had a changing population of anywhere from thirty to forty thousand for the year, owing to the Nobel Works; that we have two hospitals, which care for most of the serious cases from a district miles in extent, and that we are surrounded by a district in which cases of infectious diseases run at large and are a constant menace to us.

The record includes the deaths which occurred in November, 1916, as a result of the epidemic of 1916, the cases having been given in the previous report.

Vital Statistics.

Deaths from all causes, 95. Births, 205.

Deaths from accident	8
Premature and stillbirths	12
Tuberculosis	6
Cancer	3
Typhoid fever (all in 1916)	3
Diphtheria (two in 1916)	3
Whooping cough	2
Measles	1
Other couses	57
	95

The death rate is exceptionally small, while the birth rate is exceedingly high, being forty per thousand. This is partly due to cases being brought to hospital from out of town.

Contagious Diseases Reported to Medical Officer of Health.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total.
Typhoid	.....	3	.....	.....	.....	2	.....	.....	.....	.....	.....	2	7
Chickenpox	5	13	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
Diphtheria	.....	.....	2	.....	.....	.....	.....	.....	.....	2	1	.....	5
Measles	.....	1	17	12	16	11	28	19	9	2	1	.....	116
Tuberculosis	.....	1	.....	.....	.....	.....	3	.....	.....	.....	2	.....	6
Mumps	.....	.....	.....	.....	.....	1	1	4	.....	.....	.....	.....	6
Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3

Our typhoid report is much more cheerful than that of last year, when we recorded 26 deaths. During 1917 we have had five cases reported. Two of these cases came direct from Winnipeg and Hull, two were para-typhoids and were better inside of two weeks, and the other did not originate here.

Our water supply has been chlorinated, but in addition to that the discharges from all typhoid cases have been collected and disposed of by us. None have been allowed to get into the lake. If the discharges from typhoid cases do not get into the lake, we will have no cases of typhoid arising from our water supply.

One of the diphtheria cases that died was brought from Point Au Baril.

Of the six cases of tuberculosis, two cases of whooping cough, and one case of measles that died, none were reported to me.

It is satisfactory to know that infectious diseases were better reported this year than last. I hope the time will soon come when the householders or doctors will report each case as it is discovered.

We have had no case of scarlet fever.

Where we have had cases of diphtheria the bread-winner has been kept in or out of the house. This is a hardship on the bread-winner, and it is done to protect the town, so I am going to ask for an allowance of two dollars a day where I think it is justified.

After the spring clean-up I arranged that the sanitary officer should visit all yards and give a certificate to each one whose premises were clean and tidy. While doing this, I concluded that it was necessary to make a sanitary inspection of the whole town, so that we would know just where we stand and what real progress was made from year to year. I began this with the Sanitary Inspector and he completed it. From this survey I have gathered the following, which was gained by a house-to-house canvass, chiefly by the Sanitary Officer.

Residences on Town side		633
Residences on Parry Harbor side		309
Total		942
Population from Seguin Street to lake		659
Population from C.P.R. tracks to lake		623
Population from Seguin to Isabella		2,300
Total on Town side		3,582
Population across river		1,576
Total		5,158
Outskirts, about		342
Estimated population		5,500
Residences and buildings on Town side attached to Town sewer	249	
Residences and buildings on Parry Harbor attached to Town sewer	40	
		289
Residences and buildings on Town side with private sewer	42	
Residences and buildings on P.H. side with private sewer	44	
		86
Residences and buildings with sewer in front but not attached, P.S.	61	
Residences and buildings with sewer in front but not attached, P.H.	21	
		82
Residences and buildings on Town side, with no sewer	316	
Residences and buildings on P.H. side, with no sewer	206	
		522
		979
Indoor closets, (414 and 96)		510
Cesspools		93
Places with bucket closets (182 and 261)		443
Number of buckets in use		732
Box closets		28
Pits		17
Chemical closets		12
Total number of baths		365

Horses, 164; cows, 71, manure boxes, 62; dogs, 107.

The contents of over four hundred closets run into the Seguin River and the lake. The Seguin River is nothing more than an open cesspool, getting worse all the time. About one hundred closets and baths run into cesspools, which are in many cases common nuisances.

Four hundred and forty-three houses have buckets, and you can be sure that all the slops and all the urine saturate the back yards. Out of 979 residences and buildings, only 289 are on the town sewer.

My purpose is to get rid of all the box and pit closets at once. They exist contrary to law.

Next, get sewers on streets where they are needed, and get the houses connected. This will rid us of the bucket closet, which, though much better than a pit or box closet, is a filthy method in most cases. Going at it systematically, we can get the town decently drained.

This will aggravate the difficulty with our drinking water. On one side will be huge quantities of sewage flowing into the lake; on the other the four streams from the chemical plant; and, all around, the drainage from Waubeek Street; while in the

middle we take our drinking water, add four pounds of bleaching powder every seven hours and take our chances.

A new water supply and sewage system are the two great needs of Parry Sound.

We need a proper isolation hospital. It need not be expensive. One built near one of the hospitals can be run economically when needed and will cost nothing when not needed.

A public lavatory is necessary. One in connection with a public building would be most satisfactory. I would advise having a public library, and in connection with it a lavatory for men and one for women. We could go about getting the library in the usual way.

We have now a satisfactory ambulance.

The bathing beach was used considerably, and the expense I asked for last year was justified.

The waste-paper cans asked for last year and this year have not been supplied. Some systematic arrangement will have to be made for cleaning our streets and collecting the garbage and refuse from the yards.

During the winter, I intend, with the Sanitary Officer, to see how the milk supplied to the town is handled. In the summer, while the cows were on pasture, the stables were not used.

I cannot speak too highly of the services of our Sanitary Inspector. His work is not always pleasant, but it is always done. Not many nuisances escape him. He is becoming more valuable to the town each year, and his services are, I am sure, appreciated by the Board.

In closing, I am pleased to be able to report that there is, to my knowledge, no case of typhoid, scarlet fever, diphtheria or other contagious disease within the municipality.

O. J. Crockford, Sanitary Inspector.

I beg leave to submit for your consideration my annual report as Sanitary Inspector of the town of Parry Sound for the year ending October 31st, 1917.

I am pleased to be able to report to you that we have had a reasonably clean and healthy town during the year. It is true that much remains to be done in the field of sanitation, but I am sure that you will agree with me that we are progressing.

We have been able to have three of our streets laid with a sewer, which has enabled us to get rid of some nuisances, and the construction of more sewers will also clear up a large number of unsanitary conditions, such as cesspools which are being built in ground which will not admit of soakage and are a continual source of danger.

The question of proper garbage collection is another thing which we have not got yet which would remove a large number of nuisances if we had a system of collection. Dairies and cow-barns have received attention during the year. In several instances improvements have been made, but we are still looking for more. Under our new by-law, which we put in force on the 26th day of June, milk test made fifty-five.

There were thirty-one copies of the milk by-law distributed, and thirty-four copies of the fruit by-law distributed, which has made a change in handling fruit and other foods. During the year, thirty-eight notices were served for the installation of plumbing, of which thirty-four houses connected with sewer. Plumbing defects, 3.

Two hundred written notices were served in connection with garbage nuisance. Thirty-one written notices were served in connection with manure boxes, which has brought about considerable improvement. Other nuisances, 60.

One hundred and twenty complaints of nuisance which have been removed by educating the people to the requirement of the Public Health Act.

In connection with notices served for the abatement of nuisances, ten cases were taken into court, of which eight were fined. The fines imposed amounted to twelve dollars. The other cases were given longer time to get rid of their nuisances. Ten pounds of butter condemned.

The restaurants have been periodically inspected, and hotels and large boarding-houses have also been inspected and various sanitary defects remedied. Two hundred and forty inspections were made.

All stores are inspected at frequent intervals and, generally speaking, are kept in a cleanly state. Slaughter-houses inspected at frequent intervals, and find some of them very well kept.

In connection with infectious diseases, five houses placarded for diphtheria, to which ninety visits were made. One hundred and sixteen houses placarded for measles, to which three hundred visits were made. Fifty visits were made in connection with other diseases.

A marked improvement is to be seen in the condition of the yards in some sections, also in the protection from dust and flies of food-stuffs.

Another improvement worthy of notice is the removal of night soil from outside

closets. I should like you to recommend some measures to govern the keeping of poultry and horses, which at present are the source of many complaints. I should like to see some steps taken to compel restaurants to have wash basins for the use of their customers. Also a proper system of garbage collection and a public lavatory installed which would make a great improvement in the sanitary condition of the town next year.

Beside my other work, I made a house-to-house canvass to find out the standing of the town in regard to the sanitary conveniences, of which the M.O.H. will give the result in his report.

In conclusion, I should like to express my appreciation of the support and encouragement I have received from the Medical Health Officer and the Board of Health and Town Council in measures I have brought before them affecting the public health.

PETROLIA.

DR. R. S. MACALPINE, M.O.H.

I hereby submit to you the report of the Board of Health for the year 1917.

The present year has been one in which there has been but very few cases of communicable diseases. The cases reported were as follows: Nine cases of measles, one case of typhoid, and two cases of scarlet fever with one death.

On March 20th your Board made an inspection of the herds from which milk dealers get their supply of milk, and also as to the sanitary condition of the different premises.

The herds were found to be in a healthy condition, and the stables in fairly clean condition.

Several inspections were made of the slaughter-house from which we get the supply of meat, and it was found to be in fairly clean condition. A cement concrete floor has been put in which has made it much easier to keep clean.

Several tests were made of the milk sold by the dealers, and the tests ranged from 3½ to 4 butter fat.

Your Board adopted a different system of disposing of the night soil to that of former years. The plan adopted was by securing a piece of ground just outside the town limits, and instead of treating it with lime and manure, the contractor ploughed it into the soil each night, and the results were all that could be desired. The rate allowed the contractor for removal and ploughing in was 75 cents per barrel.

The amount of money spent by your Board was $238.00.

During the year we held six meetings, besides various consultations.

Report of M.O.H.

I herewith beg to submit my annual report for the town of Petrolia for the year 1917. The extreme lateness of this report will be explained later. I may say that during the entire year we have enjoyed wonderful immunity from contagious and epidemic disease, as the following statistics show:

Measles, 9 cases, mild.
Typhoid, 1 case, imported.
Scarlet fever, 2 cases; 1 death.
Births, 59.
Deaths, 47.

No cases of tuberculosis have been reported. Indeed, I believe only one case of tuberculosis has occurred in several years. We have a very good supply of water from Lake Huron, a distance of fifteen miles, as our record of typhoid would seem to indicate. Except during freshets after heavy rainfalls the quality of water is very good for all purposes. From a sanitary standpoint, we suffer mostly from poor drainage, a lack of interest in keeping backyards cleaned up, accommodation for and the regular removal of stable manure, and the proper disposition of all kinds of garbage. The authorities, however, are giving the matter some attention and improvement is taking place.

The popular slogan of the day is "Win the war." Till this devoutly to be wished object is attained I am afraid sanitation will hardly receive the attention it deserves.

PORT COLBORNE.

DR. JOHN SHULTIS, M.O.H.

During the year now drawing to a close I have to report a favourable condition in the health of our village. In the month of January we had eight cases of typhoid fever, the source of which was indefinite, as several examinations of water made by the Provincial Board of Health were pronounced very favourable. An occasional case developed in our village since, but in every instance we considered it contracted from outside sources, as the patients worked out of town.

Several deaths occurred from pulmonary tuberculosis, and after the death of said individuals the premises were disinfected in the manner laid down by the Provincial Board of Health, formalin being used in all cases.

During the year our village was threatened with an epidemic of rabies. A dog so affected was shot and its head sent to the laboratory of the Provincial Board of Health, where it was pronounced affected with the said malady. The Government inspector immediately visited our village, and all dogs were ordered muzzled till all danger was past. Several dogs known to have been fighting with the infected animal were disposed of, and others that had been in their company tied up till all danger was past, the result being no further spread of the dread malady. One girl, eight years old, that had been severely bitten by the rabid dog was sent to Toronto, where she received the Pasteur treatment and returned home in due time in perfect health.

During the year our Council passed a milk by-law, requiring all vendors to secure a license, and the Chief of Police and Medical Health Officer were appointed to look after the premises of all parties supplying milk to our village. The result was numerous visits were made to the premises of the milk supply, and in nearly all cases they were found in a good sanitary condition. Any premises not coming up to the standard were requested to make all changes necessary at once, the result being a very favourable supply of milk was procured for our residents.

The water supply of our municipality is looked after by our Engineer, who takes proper precautions to secure pure water for our inhabitants. He adds chloride of lime to the water in the proportions designated by our Provincial Board of Health, and I must say in every instance where water was taken from the village taps and sent to Toronto for analysis it was pronounced favourable; whereas on several occasions water sent from wells and from canal were pronounced unsafe for use without boiling.

The ice stored and supplied by our ice-houses was inspected at time of procuring, and I must say it certainly did credit to the owners to secure such a good supply, and samples of water taken from the lake where the ice was procured, and sent to Toronto for analysis, was pronounced by the Provincial Analyst as first-class.

Regarding the garbage and night soil collection: it has been looked after satisfactorily to the Board of Health by the Jackson Sanitary Co., all such refuse being removed from the village in properly constructed conveyances prepared for the purpose: the result being a decided improvement in the appearance of our village as well as the health of the community.

Wherever new residences were built and septic tanks installed, such were looked after by our Inspector, Mr. Jackson and observed that such were constructed according to the regulations laid down by the Provincial Board of Health.

The above report covers fairly well the work of the Board during the present year.

PORT HOPE.

DR. GEO. A. DICKINSON, M.O.H.

During the year 1917 the duties of the Chairman of the Board of Health have not been very arduous. All of us were so occupied with the terrible world war that has raged during the last three years that many minor duties of local interest have been pushed to the background.

From the reports of our Medical Officer of Health, which I herewith present to you, I find that, speaking generally, from the sanitary point of view our town is in fairly good shape.

Owing to the impossibility of our Council finding a man to act as scavenger to remove the night soil from outside closets, the town by-law which had been in force for that purpose had to be repealed, so that it is now the duty of every householder having such outside convenience to himself make provision for the work of removal.

Our Sanitary Inspector, whose duty it is to see that this work is done by householders, and that the law is observed, has not yet made any report on the subject, so that I am not in a position to say whether householders are observing the law or not.

In company with the Medical Health Officer I visited a number of the dairy herds from which the town obtains its milk supply, and am very pleased to report to you that these dairy herds are among the very best to be found anywhere in the surrounding district. The dairy barns and the milk houses are well arranged, clean and tidy.

The health of the community, as shown by the report of contagious diseases, has been good, and the death rate has been low.

It has become quite the usual thing for those suffering from serious disease or injury to be removed to the Port Hope Hospital for treatment and nursing, and I cannot close this my short report as Chairman of the Board of Health without commending this course to all those who may require to undergo any surgical operation or need prolonged medical treatment and who may be in need of careful nursing and oversight.

Thanking you gentlemen and the members of the Board of Health for the courtesy you have shown me and for the honour you have conferred upon me as Chairman of the Board of Health, and with all good wishes.

Report of the M.O.H.

During the year ending on November 30th, the premises of all those licensed to sell milk in the town of Port Hope have been regularly inspected. Mr. Wilson, the Chairman of the Board of Health, visited a number of the dairies with me, and he expressed great satisfaction at the good condition of the herds as seen on these visits. We can say without any exaggeration that so far as we are able to judge, the dairies from which Port Hope receives its supply of milk are as good as any herds that can be found in the County of Durham. Port Hope's milk supply is derived from the best herds in the district. Mr. Wilson, I think, knows the farms in the Port Hope district better than any other person in Port Hope, and as valuator, auctioneer and judge of stock and farm property he is well qualified to give an authoritative opinion on the subject. The larger vendors get their milk from a number of different producers, and all these have been visited and inspected throughout the year.

The majority of the dairymen take pride in their well kept premises, and most of them are quick to make any improvements or changes suggested by your inspector. One dairyman who had a good barn but very poor fittings has this summer spent nearly a thousand dollars in cement floors, partitions and other stable furnishings. So that now, with only one or two exceptions among the smaller producers, all the dairies are in good shape.

During the year samples were taken monthly from each of the vendors, and each sample was carefully examined for percentage of butter fat and for dirt sediment. In conversation with the vendors in regard to these examinations much emphasis was placed on the necessity of supplying milk that was as clean as possible, and in this respect the milk has been found very satisfactory. This improvement, we hope, will be permanent.

Since the first day of December, 1916, up to November 30th, 1917, some sixty-five samples of milk have been examined for percentage of butter fat and for dirt sediment. Samples were taken each month throughout the year, the average for the year being 3.34 per cent. of butter fat. No sample was found to be below the three per cent. standard of butter fat, as required by the by-law.

The average percentage for the year was found to be, for each of the principal vendors, as follows, viz.:

H. Zealand	3.24
W. J. Highfield	3.29
T. W. Philp	3.39
J. Sinnott	3.43

The greater part of the milk sold in town is delivered in bottles. This is a very great improvement over delivering in bulk from an open can.

No matter how clean and pure milk is, there are many reasons why it should be boiled before being used. The main reasons for boiling are that milk is a rich animal food and a great many samples of milk contain the germs of tuberculosis; these and other germs live and multiply rapidly in it because the milk is very nourishing, and germs cannot be strained out of milk, but they are very easily destroyed by boiling or pasteurization.

Communicable Diseases.

During the year ending the thirtieth day of November, 1917, there have been reported fifty cases of communicable diseases as follows, viz.:

Diphtheria	26 cases.
Chicken-pox	6 "
Mumps	3 "
Measles	1 "
Typhoid fever	5 "
Whooping cough	6 "
Scarlet fever	2 "
Erysipelas	1 "

No epidemic has occurred during the year.

It will be noted that diphtheria makes up about one-half of the total reported, with but one death. Diphtheria has lost most of its terrors, owing to the very free use of antitoxin in the treatment. To the Provincial Board of Health this great decrease in the death rate from diphtheria is in very great measure due. As a rule there is now no hesitation on the part of physicians in using antitoxin freely and early in every case of the disease. Some physicians go farther than this and use the antitoxin in almost every case of sore throat, even if there be no suspicion of diphtheria. It seems to me that in any community where diphtheria is at all prevalent this should be done, and diphtheria antitoxin should be used in all cases of croup or inflammation of the throat, no matter whether there be suspicion of impending diphtheria or not. A number of cases have occurred in which this practice has been followed, and the evidence thus far obtained has been uniformly favourable.

Only two cases of scarlet fever have occurred in Port Hope during the year, and these were in one family and were quite typical cases of the disease. It was not difficult to trace the source of contagion in these cases, but owing to the very careful management, treatment and isolation any further spread of the disease was prevented.

Only one case of measles was reported, and this happened in a family where the measures recommended were very faithfully followed by all concerned, thus preventing any spread of contagion.

Of the five cases of typhoid fever reported, four of them were treated in the Port Hope hospital, where very careful measures were taken to prevent the spread of the disease. Three of the cases were from out of town. Only two of all the cases were residents of Port Hope.

Of whooping-cough there were six cases, and also six of chicken-pox, with one of erysipelas and three of mumps.

PRESTON.

DR. J. SCOTT HOGG, M.O.H.

I beg to submit the following reports of the vital statistics and sanitary condition of the town of Preston for the year ending December 1st, 1917.

Total number of deaths, 55, or 11 per 1,000 of population.

Total number of births, 134, or 26.8 per 1,000.

Causes of death:

Appendicitis and peritonitis	4
Paralysis and apoplexy	3
Heart disease	7
Pneumonia	6
Tuberculosis	2
Glioma of brain	1
Mastoid abscess	1
Cancer	6
Acute capillary bronchitis	2
Gastric ulcer with perforation	1
Drowning	1
Gangrene in foot, with amputation	1
Erysipelas	1
Arterio-sclerosis	1
Convulsions	2

Diphtheria	1
Bright's disease	1
Dysentery in aged	1
Acute intestinal indigestion	2
Entero-colitis	1
Premature births	5
Stillborn	5

We have had two sporadic cases of typhoid, five cases of diphtheria, and slight epidemics of German measles, chicken-pox, whooping cough and measles, all of a mild type and limited in numbers.

The water supply has been of exceptionally good quality, with the exception of a few days when our system became slightly contaminated succeeding a disastrous fire when water of questionable origin was admitted to control this fire.

The milk of the various vendors has been tested from time to time, when it has been found all up to the standard in butter fat and cleanliness.

RENFREW.

DR. JAMES J. MCCANN, M.O.H.

I have the honour to submit to you the report of the sanitary condition of the town, and the Health Department for the year, December 1st, 1916, to November 30th, 1917.

There have been reported during the year 100 cases of measles; chicken-pox in 22 families, with a great number of cases not reported; 1 case of cerebro-spinal meningitis; 9 cases of scarlet fever; 17 cases of typhoid fever, with 3 deaths; 16 cases of diphtheria, with one death; 12 cases of mumps.

The typhoid fever was confined almost entirely to one section of the town and to one industrial plant. The disease was not water-borne, but was transmitted entirely by flies, the absence of sewers and presence of out-door closets in the Barnet subdivision being prominent contributing factors. There were in all 177 cases of communicable diseases.

An arrangement with Victoria Hospital *re* nursing charge of the Isolation Hospital was put into effect during the year, with good results. The Isolation Hospital is in need of repairs, which, however, are soon to be made by the Council.

The chemical treatment of the water supply is still carried on, and analyses at various intervals showed it to be satisfactory. A new filter is being added to the present system, so that henceforth the dangerous practice of turning raw water into the mains in the event of fire should be done away with.

During the year there have been 177 births and 74 deaths compared with 136 and 82 respectively last year.

Diagnostic outfits as supplied by the Provincial Board of Health have been distributed to the local physicians, and a supply of antitoxins, serums, etc., is kept on hand and supplied free of charge.

There have been a good number of complaints *re* nuisances, which have been investigated and remedied. The scavenging system is still the cause for numerous complaints. The Board of Health, at Council's request, made a report in September last *re* the solution of the difficulties, but to date it has not been acted upon. The present system is entirely inadequate to the needs of the town, and the number of out-door closets is continually on the increase instead of the reverse. Water and sewage systems should be further extended to the newer parts of the town, and some means ought to be taken to urge or compel property owners to make sewer connection when such is easily accessible.

A garbage collection system has been instituted during the year and is producing good results and should be encouraged and extended.

The District Officer of Health, Dr. Maloney, made an investigation *re* typhoid outbreak and an inspection of the town in September, and reported that the health and sanitary conditions in Renfrew were satisfactory.

I wish to thank the members of the Board, the Secretary and Sanitary Inspector for their assistance and co-operation during the year.

ST. MARY'S.

DR. J. R. STANLEY, M.O.H.

I beg leave to report regarding the work of the Board of Health for the past year and regarding sanitary conditions generally:

1. While contagious diseases have been very prevalent during the year, they have been mostly of the lighter character, such as chicken-pox, German measles and whooping cough. The latter is not generally regarded as a serious disease and placarding is not required. I am of the opinion that in reality it is one of the most serious of children's diseases and one that should be placarded and closely quarantined. A trial is being made by the Provincial authorities of a vaccine which it is to be hoped may prove a benefit in this condition.

2. Of what are usually classed as the more serious of contagious diseases, such as smallpox, diphtheria and infantile paralysis we have been fortunately entirely free; one case of typhoid of uncertain origin has occurred during the year.

3. An analysis of the town water recently taken from a down-town tap shows it to be absolutely free from bacteria, a remarkably satisfactory condition.

4. I have found one or two cases where tenants have not been provided with a proper supply of water and where they have to depend on their neighbours for drinking water. Owners of houses for rent should be made to understand that the Provincial health regulations require that a house owner furnish his tenants with a proper supply of drinking water. Possibly, if publicity were given to this requirement, more drastic methods of remedy might not be required. Further, I think it would not be out of place for the Council to prohibit by by-law the sinking of any new wells within limits supplied by town water, as surface wells and superficial springs within the town are liable to be contaminated.

5. I regard the milk by-law passed by the Council as a very important piece of legislation and do not consider that the amendments suggested will weaken the measure appreciably while they may make it more easily enforced.

6. The scavenger by-law recommended by the Board of Health is, I believe, worthy of very careful consideration. It would be economical to those needing such a service and would pay its own way, while from a health standpoint it would mark a great advance. Next spring may see considerable difficulty in the securing the services of scavengers by the present individual methods.

7. I think no time should be lost in passing a by-law making it compulsory for all citizens installing septic tanks, cesspits, or any other method of sewage disposal, to place plans of the same in the hands of the Clerk to be passed upon by the Medical Health Officer or by some efficient person. Only in this way can any check be kept on the methods of sewage disposal. Lack of some such check has resulted in considerable damage to the town by the use of drains for sewage.

8. The Board of Health has paid considerable attention to the fly nuisance, particularly by insisting on the proper covering of manure from stables. The result has been a considerable diminution in the number of flies. I think next summer this regulation should be even more rigorously enforced.

9. I beg to bear witness to the close attention paid by the members and officers of the Board to their respective duties. The Health Inspector has been hampered in the enforcement of the milk by-law by the changes proposed. Once the by-law is put in satisfactory shape I will expect its enforcement to be carried out faithfully.

SANDWICH.

DR. W. T. BEASLEY, M.O.H.

During the year 1917, the town of Sandwich, through the local Board of Health, took all necessary steps to keep the town in a sanitary condition and to safeguard the health of its citizens.

Early in the spring, the usual notices were sent, requesting all householders to clean their yards and put their premises in proper sanitary condition. The Council helped the Board of Health by hiring teams and men to collect and remove all garbage.

The contagious diseases during the year were as follows: Scarlet fever, 3 cases; diphtheria, 7 cases; typhoid, 10 cases; measles, 2 cases; cerebro-spinal meningitis, 1 case; and tuberculosis, 3 cases.

During the year, a few complaints about pigs were received; these were at once investigated and the nuisance, if any, remedied.

One house was condemned as unsanitary and placarded. Two owners were notified to connect premises with sewer for both waste water and sewage.

A capable Milk Inspector was appointed, and licenses were issued to milk dealers only after the Inspector had inspected the premises of the dealer and certified everything satisfactory.

During the year, the Board of Health requested the Council to construct two sewers for sanitary reasons, which request was complied with. The total cost of the sewers constructed by the Council during the year was $35,526.82.

The various members of the Board of Health attended the meetings of the Board very regularly, and dealt efficiently and promptly with the different matters brought before the Board.

SANDWICH EAST.

DR. GUSTAVE LACASSE, M.O.H.

In connection with our Local Board of Health, I beg to report that during the year 1917 the Board met eight times, and aside from the usual routine business the most important matter taken up at those meetings was in dealing with the diphtheria outbreak, the details of which are fully covered in our Health Officer's report.

The diphtheria epidemic is now well under control and we hope to be rid of it within a short time.

Accompanying this report please find a copy of the report made to this Board by Dr. Gustave Lacasse, our Health Officer..

Report of M.O.H.

For the third time I come before you, gentlemen, to give my annual report concerning the health situation in our municipality. Unfortunately the condition this year was the worst of the three and one-half years during which I had the honour to be your executive officer. It is true we had to face a severe epidemic of typhoid in the past, but this year breaks the record. We had to deal with three epidemics, amongst which the fiercest that ever was seen in this vicinity: I mean that diphtheria epidemic which is still sweeping through one of our adjoining municipalities. Following is a tableau summing up the situation for 1917, as far as contagious diseases are concerned:

Contagious Diseases.

Scarlet fever—4 cases reported. No death.
Tuberculosis—2 cases reported. 1 death.
Typhoid fever—3 cases reported. No death.
Anterior polio-myelitis—2 cases reported. 2 deaths.
Measles—Slight epidemic during spring. No complications. No death.
Mumps—Slight epidemic during fall. Beyond control. No death.
Diphtheria—Severe outbreak located mostly in the western part of municipality, Grand Marais, etc. 26 cases reported. 4 deaths.

Particulars.—We finally succeeded in stamping out that last epidemic by closing the school for a few weeks and making a house-to-house investigation, examining in all over 225 throats.

Kindly note that we have to register seven deaths in all. In proportion to the number of cases the percentage is not very low, and imagine how much suffering would be prevented and how many expenses avoided if we had no cases at all. That is the result we should aim at and in this we shall succeed.

First, in studying the causes of the evil, and, second, in using the proper means to get rid of them.

To my mind, here are the principle causes in our locality:

1st. Hiding of suspicious cases, or neglect to report them.

2nd. Inspection of schools and places of public gathering, not scrupulous enough.

3rd. As far as diphtheria is concerned, germ carriers.

You see by that that all of us—teachers, parents and members of this Board—have to take a share of the burden, because we are all guilty on one ground or another; and here are the means:

1st. Detection of suspicious cases and punishment of those who deliberately hide them, or who neglect to report.

2nd. Proper and effective supervision of all schools and public places, with the assistance of a bacteriologist if necessary.

3rd. Detection and immediate isolation of germ carriers.

To the study of those causes, and to the steps to take in order to get rid of them, we shall give our continuous attention, and that is what I, for one, intend to do, especially

this year during that period called the "Canadian Medical Week" that will take place in Hamilton between May 22nd and June 1st, at which will be not only the Ontario Health Officers but also the Canadian Public Health Association, the Ontario Association for the Prevention of Tuberculosis, the Ontario Medical Association and the Canadian Medical Association.

To be fair to a few of the ratepayers of Sandwich East, I wish, before I close this report, to mention a petition signed by about twelve citizens and addressed to our Board, asking "that the Walker people may abate the nuisance provoked by the manure that they allow running from their farm and filling the public ditches, then infecting our drinking well water, and being also a breeding place for innumerable flies, carriers of germs." I confess that I did not act upon it, and here are the reasons: It is admitted on one hand that the diphtheria outbreak came mostly from germ carriers, that is, the persons that, although not being sick themselves, carry the germs in their throat, thus exposing others to the disease, and on the other hand, that not one case of dysentery, which is the real disease caused by a nuisance such as the one above mentioned, was reported. In short, we had our hands full dealing with a condition a good deal more dangerous and that took all our time and effort.

SHALLOW LAKE.

DR. FRANK CAMPBELL, M.O.H. (PRO TEM.).

I herewith submit annual report of work done by the Local Board of Health for the year and the sanitary condition of the village.

The first meeting of the Board was held on February 1st. Mr. L. N. Bird, of the village, was appointed Chairman of the Local Board.

A second meeting of the Local Board was held on March 5th, at which all members were present. A review of the necessary work was given by the M.O.H., and the Sanitary Inspector was instructed to see that same was carried out.

The third meeting of the Board took place on June 4th, and the final meeting on December 20th, when the report of the M.O.H. was received and adopted.

During the year we had only one case of contagious or infectious disease, as reported by the M.O.H.

The sanitary condition of the village was all that could be expected, due to the careful and continuous inspections carried on by the Sanitary Inspector.

Report of the M.O.H.

As you are aware, I assumed the office of your M.O.H. on the first of April, 1917, being *locum tenens* for Dr. Howes, who is now serving his king and country as a military surgeon. Since taking over this office I can report an almost clear bill of health.

No contagious or infectious diseases, with the single exception of one family, the members of which acquired *F. Rubra.* The medical attendant promptly reported, and your local officers had a careful quarantine put in force, and the disease, being thus isolated, made no further progress. So far as I know, not a single case of tuberculosis has been reported in the confines of your village.

In the later part of June I made (as your M.O.H.) my official visit to your public school and examined the throats and oral cavities of the pupils.

I must report that in the senior form, the pupils were almost a unit, in almost complete absence of enlarged tonsils, adenoids, carious teeth, etc.

In the junior form I found that many of the younger pupils had adenoids, a large proportion had carious teeth, and a few had enlarged tonsils. The general public are becoming alive to the dangers which arise from this state of affairs. Many a bright pupil becomes dull and stupid, when the services of an oral surgeon and dentist would remove this condition of affairs.

I must give a good deal of credit for the fairly clean teeth, which I noted in both forms, to the teachers.

The water supply of the village is fairly good, considering that the supply is mainly from open wells.

The Sanitary Inspector is a very careful and efficient official and does his part well. I must here point out, as I have already done, on more than one occasion, the great danger arising from the "pit privy." Your Sanitary Inspector assures me that to this end he is working, so that in the near future, only the "draw" or "box" privy will be the rule.

On the whole, considering that you have no water works, etc., the sanitary condition of the village of Shallow Lake may be considered satisfactory.

SIMCOE.

Dr. J. C. C. Grasett, M.O.H.

I beg to present the following report for the past year:

We have been fortunate in having very few communicable diseases this year. There were three cases of measles reported, one case of scarlet fever and seven cases of typhoid. Several suspicious cases resembling diphtheria proved upon analysis to be free from the diphtheritic germs. A few cases of whooping cough came under observation, but none were regularly reported. Five cases of a severe form of chicken-pox were reported in January and February, which in some respects resembled mild smallpox, but as chicken-pox was prevalent at the time the diagnosis was maintained as chicken-pox. These cases were kept under quarantine and no further trouble was experienced.

The mortality rate might be considered high for the population, 57 deaths being reported from various causes as follows:

Accident	1	Cerebral softening	1
Cholera infantum	1	Chronic nephritis	1
Heart failure	5	Asthma	2
Cerebral hemorrhage	1	Chronic gastritis	1
Tuberculosis	4	Convulsions	1
Pneumonia	7	Exhaustion	1
LaGrippe	2	Anemia	1
Sciatica	1	Dysentery	1
Inanition	1	Typhoid	1
Senility	9	Uremia	1
Intestinal obstruction	1	Goitre	1
Cancer	3	Still-born	3
Abdominal abscess	1		

The birth rate succeeded in evening up the wastage by death, exactly 57 births being reported, which equals the number of deaths, the males preponderating at 33 to 24 females.

Samples of water and milk were collected for analysis at various times. Some cases of typhoid fever were traced to impure well water, but one case occurred where the town water was used, and the source of the infection in this case must have come from other cause than the water, as the town water (tap) as usual continues to show a good condition of purity in the analysis.

The milk supply was found to be well up in the percentage of butter fat and free from preservatives. Some samples were none too good in bacterial count, which would appear to be not always the fault of the dairyman, as those using artificial cooling and clarifying apparatus were not always the best in bacterial count, although milk treated in this way should always be purer, especially in the summer months.

The usual spring notices were distributed about the town, along with literature from the Provincial Board for the education of the public along sanitary matters.

Inspection of the dairies and sources of the town milk supply were made and analysis made of the water supply of the dairies. The premises in most cases were in good and cleanly condition, cement floors, good drainage, good water supply, and the manure collection well cared for in most cases. In a few cases the stables were not clean and drainage was faulty. The three slaughter-houses were inspected, and none were up to the regulations for slaughter-houses as provided by the Health Act. One had a good cement floor and was clean, with sides whitewashed and good drainage facilities; window screens were old. The other two had wooden floors, no screens to doors or windows, but good water supply. All three had hogs kept in yard or pens immediately adjoining the slaughtering room. The regulations require that the doors and windows be properly screened and that hogs should not be kept within 150 feet of the slaughter-house.

Inspections were made and permits given for one year to five persons for storing rags, metals and bones as follows: Wm. Jaques & Son, M. Finkle, Paul Wilson, Max Rhum, A. & L. Levine. Permission was also given Mr. A. C. Lea to store waste paper, packing, etc., in the Curling Rink.

The Provincial Board have, as usual, supplied free of charge a constant supply of vaccine, diphtheria antitoxin, anti-typhoid serum and anti-meningitis serum.

I beg to recommend:

1. Establish an area to include all streets provided with sewer accommodation within which area outside closets will be prohibited, and in this connection adopt and carry out the following section of the Public Health Act, sec. 25, sub-sec 2:

"Where a local Board in any town or city recommends that sanitary conveniences shall be installed in any building, and is of the opinion that the owner of the premises

is unable to pay the expense of the same at once, the municipality may install suitable sanitary conveniences at the expense of the owner, and the Board may direct that the cost, including interest at 5 per cent., be paid by the owner in equal annual instalments extending over five years."

This area might be made to include the so-called "fire limits," and thus do away with offensive closets in the more thickly populated parts of the town.

2. I would also recommend the adoption of the "Milk By-law," which would give the town a better control of the source of the milk supply and a more efficient handling of the same, as at present we are able to recommend only to milk dealers the proper handling of the milk supply.

STAYNER.

DR. R. R. SMALE, M.O.H.

The local Board of Health of this town have held four meetings during the year 1917.

It is pleasing to note how singularly free the town has been during that year from preventable disease. Only five cases of measles, of light nature, and two of scarlet fever have been reported to me during the year 1917. None of the above was followed with fatal result.

I beg to enclose herewith the annual report of Dr. Smale, M.O.H. for Stayner.

Report of the M.O.H.

The following is the annual report on the public health of the town of Stayner, Ont.

Infectious Disease.

Measles, five cases; all recovered. Scarlet fever, two cases; all recovered.

Water Supply.

The water supply has been uniformly good. No complaints have been received, nor has there been a single trace of disease traceable nearly or remotely during the past year to defective water supply or polluted water.

No case of typhoid.

Town Property.

The lock-up, long a thorn in the flesh of the town, due to its unsanitary position in having no means of disposal of sewage, nor any ground outside of the walls to dig cesspool, nor any water supply, has long been under the condemnation of the Board of health. The Council has been induced to take action. The lock-up is up for sale, and an iron cage purchased for the Town Hall, where sanitation will be efficiently looked after.

Private Property.

The cleaning up and keeping clean of premises was well attended to and early. Those few who were dilatory were notified. Also, late in the season, some having defective drains flooding neighbours' cellars were forced to rectify the same.

SUDBURY.

DR. W. J. COOK, M.O.H.; JAMES TAYLOR, SANITARY INSPECTOR.

We have the honour to submit this report upon the sanitary work for the twelve months ending the 30th November, 1917.

Garbage Collection.

The garbage collection has been regularly and efficiently done by the contractor; complaints few and always had prompt attention, considering the labour question in general. It is most gratifying to have this and the scavenger work done without any interruption.

The incinerator continues to give full satisfaction; has only required some repairs to the fire-box and the addition of electric lighting and the installation of a blower. This, when complete, ought to make the incinerator fully efficient.

Garbage, etc., destroyed, total loads, 2,948.

39 dogs, 8 horses, 1 calf, 1 cow, 6 hogs.

2½ barrels of fish, 3 barrels of pork, 2,000 lbs of meat, etc.

2 quarters of beef, 2 cases of eggs, 500 lbs. of turnips.

Collections.

Collections have been well maintained; the sum of $2,057.40 has been collected, leaving an outstanding balance of $63.70 closet account, and $166.50 for cesspools, the work having cost the sum of $1,961.65.

Plumbing and Drainage.

Ninety permits have been issued for work under this by-law, and all have been inspected and approved. There remain three occupied and two vacant houses not connected to the service where sewers exist, which we hope will be connected early in the spring.

Water Samples.

One hundred and forty-two tests were taken and sent to the Provincial Laboratory—22 from Lake Ramsay, 8 from dairies, and 112 from the town taps. Of those, 8 showed contamination in 25 c.c., 4 in 50 c.c., and 2 in 5 c.c. The month of August was the worst report, and immediately the trouble was located, the Medical Officer of Health took the necessary precautions to avoid a repetition.

Dairies.

Dairies have all been regularly inspected and a decided improvement has been made at all the large dairies, especially in the milk-house and handling. One hundred and thirty-five samples of milk have been taken and tested, and eight samples of cream. Only three were below butter fat, being two at 2.8 per cent. and one at 2.6 per cent. The highest was 5.4 per cent. and the average was 3.85 per cent.

Cream tests were all above the standard, the lowest being 17.50 per cent., and the highest was 26 per cent.

Bake-Shops.

In May the Council made the appointment of Bread and Bake-Shop Inspector.

There is now a great improvement in the bake-shops for the requirements of the assistants, the handling of bread, and also the standard weight is being produced. There has been taken and handed to the hospital 373 loaves, and the children's shelter received 65 loaves. Total loaves, 438.

Infectious Disease and Quarantine.

Unfortunately, in June a case of smallpox came into the town, and from this twelve more developed. The Vaccination Act was immediately enforced for all the children of school age, and every assistance was given by the school principals to have this regulation complied with and thus avoiding what at one time had every indication of an epidemic. There were under quarantine 13 cases of smallpox, 17 diphtheria, and 3 scarlet fever. Total persons under quarantine, 25 adults and 70 children. Every precaution was taken in releasing and disinfecting the houses.

Notices.

Two hundred and forty-seven written notices have been served after the usual verbal notice has not been complied with, and it is very gratifying to note the improvement and ready response by the residents to any requirements of the Health Act and the by-laws that we may be called upon to enforce.

Prosecution.

Again we must report a few prosecutions and hope by another year that this item will almost disappear. There have been 29 cases taken before the Police Magistrate, and a conviction recorded in all. One case was reversed upon an appeal; 15 cases for

unsanitary premises; 9 were allowed suspended sentence; 4 fined $5.00 and costs, and 2 fined $10.00 and costs. Milk, 2 cases—$10.00 and $5.00, together with costs. Meat, 3 cases—2 fined $5.00 and 1 $2.00 and costs. For not observing quarantine, 3 cases, 2 being allowed on suspended sentence upon payment of costs, and 1 imprisoned for one month. Total fines, $142.00.

Inspection.

Regular inspections have been made of all hotels, restaurants, lodging-houses and blocks, fruit stores, abattoirs and general business premises. There is a marked improvement in all, especially in the supply and handling of all food.

We take this opportunity of thanking the members of the Board of Health and the Town Council for their advice and ready support; also the public generally for the courtesy and help given in the execution of the duties required.

THOROLD.

DR. NEIL CAMPBELL, M.O.H.

During the past year we have been singularly free from disease which was controllable by our efforts. Of contagious diseases we have had:

	Cases.	Deaths.
Typhoid	2	0
Diphtheria	6	0
Scarlet fever	1	0
Smallpox	0	0
Measles	9	1
Whooping cough	21	1

We had six meetings during the year, all well attended, and this was chiefly due to the efforts of our energetic Chairman, whom I hope to see in his present position for many years to come.

The collection of garbage has been reasonably efficient, and the disposal was improved very much last summer by a fire being kept burning in it during all the time that weather permitted.

During the latter part of last winter our regular water supply failed owing to the water in the canal falling lower than the bottom of our intake pipe. It became necessary to pump water directly from the canal at the pumping station, a very impure and dangerous source. By strong chlorinating and advising the people to boil the water we succeeded in avoiding any ill effects, but we might not again be so fortunate, and as we are to-day confronted by the same conditions I would strongly advise the deepening of the intake as soon as weather permits, as it must be done while navigation is closed.

Stable owners have not been prompt to obey the order concerning manure piles, and I would suggest that the Inspector make it plain to all such that this by-law must be complied with, as we have now given ample time so that it will not impose a hardship on anyone.

Two dogs suffering from rabies were discovered in town during the year, and two children were bitten by one of them. These children were given the Pasteur treatment by the Ontario Board of Health.

WESTON.

DR. J. A. MELDRUM, M.O.H.

During the year there have been reported 2 cases of tuberculosis, 3 of diphtheria, 83 of measles, and 2 of typhoid fever. Of the cases of typhoid fever the probability is that both were imported. One of them undoubtedly was, as he was taken ill the very day of his arrival in town. The other case was a foreigner residing in Shoddy Row. The epidemic of measles occurred in spring and early summer; every case was placarded, as well as those of the other diseases in which placarding is required. However, to prevent the spread of measles, it will be necessary, should we have another epidemic

of the kind, to have a special constable appointed to see that the children of quarantined houses obey the law and are not allowed to run on the streets. It is impossible for our regular Sanitary Officer, who is the town Chief of Police, to look after them and attend to his other duties as well.

Since November 1st, 1916, there have been 51 births, 14 marriages and 42 deaths. The causes of death were as follows: Heart disease, 5; old age, 3; apoplexy, 2; typhoid fever, 1; meningitis, 1; bronchitis, 2; cerebral abscess, 1; tuberculosis, 6; pneumonia, 6; premature birth, 3; still-born, 2; perforation of stomach, 1; chronic entero-colitis, 1; pericarditis, 1; killed by fall, 1; pernicious anaemia, 1; cholera infantum, 2; malnutrition, 1; hydrocephalus, 1. There has been some neglect in reporting the cases of tuberculosis, as there have been six deaths and only two cases reported. This should not be, as it is very important that tuberculosis should be reported. However, two of the cases that were not reported were from the King Edward Sanitarium, or were patients there. As usual, everything has gone well with the collection of garbage; the garbage man, who is very efficient, calls at every residence once each week, and all cans of garbage left out are emptied. There are still some citizens who have not complied with our request to furnish themselves with properly covered metal receptacles for their garbage. Quite a number of our streets were oiled at intervals this summer. This is going the right way, and, no doubt, as the streets are improved and gravelled, the oiling will be further attended to; it is a very important matter in connection with the health of the people. During the summer there were complaints that the milk supplied by the dealers was not all that it should be. There are four milk dealers at present which supply milk to the citizens of the town; one of them furnishes pasteurized milk. While believing that pasteurized milk is safer, in a general way, than unpasteurized milk, we do not as yet insist on having the milk pasteurized, but be do insist that the milk be clean and of full strength. We have now at our disposal instruments recently procured for testing milk in every way, both as regards freedom from dirt and freedom from water, and also whether or not it contains a sufficient quantity of cream. The milk dealers claim to be perfectly willing to have their milk tested at any time and to place every facility at our disposal to have it done. The dairies or farms from which our dealers obtain their milk shall be inspected from time to time to see that everything is kept clean and that the cows are healthy. The model milk by-law issued and recommended by the Provincial Board of Health was adopted at a recent meeting by our Town Council, and it is now a by-law of the town. We are having a sufficient number of copies of it printed, so that one may be given to each person interested, dealers, dairymen and farmers. A sample of the town water has been sent to the Provincial Analyst's Office for examination once or twice to three or four times each month throughout the year. For eight months, up to the end of June, there was no trace of anything injurious found in it. During July, colon bacilli were found in considerable numbers, although not sufficient to make it necessary to ask householders to boil the water. During the last three months there has been a great improvement over July, but even yet it is not as good as it was during the first eight months of the Board of Health year. Although our Commissioners have been endeavouring to give us perfect drinking water the year round, they have quite a good deal to do yet before that goal is attained.

WINGHAM.

Dr. R. L. Stewart, M.O.H.

I have the honour to submit to you the following report for the year 1917.

The Municipal Board of Health have held their regular meetings as required by the Provincial Board of Health. The year has perhaps been one of more than usual anxiety for the Board in general, and for the Medical Officer of Health in particular, on account of the prevalence of the two contagious diseases, diphtheria and scarlet fever.

Up until November 5th, when the last case of diphtheria was placed under quarantine, the town, I may say, for the past eighteen months has never been without a case, and at times there were several.

The first case of scarlet fever developed in the late spring, and since that time we have never been absolutely free from a case under quarantine. From this disease at one time there were at least a dozen homes placarded. In spite of the fact that the local Board had cards printed setting forth the regulations of the Provincial Board relative to the observance of quarantine, I believe some paid little heed thereto, and this helped to counteract the efforts to stamp out this disease, which is perhaps, of all

contagious diseases, the most tenacious. Feeling that public schools are the hot-beds for the spread of contagious diseases, and knowing positively that the cases almost at once became more numerous on the reopening of school after vacation, we had it closed for eighteen days, during which time there was an evident decrease in the number of cases occurring. In the meantime, by request, we had an official visit from Dr. McNally, District Health Officer, and an emergency meeting of the joint High School, Public School and Health Boards, where the situation was discussed and the best means of controlling such positions suggested. The class-rooms, hall and basement of the public school were thoroughly fumigated with formaldehyde before being re-opened. No child is being allowed to return to school from an infected home until the expiration of three weeks in the case of diphtheria and six weeks in the case of scarlet fever. After the occurrence of the last case and thorough fumigation, a large percentage of the cases have been mild, and no deaths have occurred directly from either disease.

The Sanitary Inspector and I made a visit of inspection to the junk yard on May 23rd.

The slaughter-houses were also inspected and found to be in a good sanitary condition.

On the occurrence of a case or two that were suspicious of typhoid fever, the Sanitary Inspector and I made an investigation of the premises surrounding the wells from which water was being drunk. Samples of water from each of these wells, and at the same time samples of the town water from two taps in different parts of the town, were sent to the Provincial Laboratory for bacteriological examination. No typhoid bacilli were found in any of the samples; one sample of well water was considered unfit for drinking purposes, the other three samples practically free from contamination.

One request for license for the deposition of junk within the town limits was not granted by the local Board.


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